EXHIBIT 24
Redacted-Public Version

UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF CALIFORNIA
SAN FRANCISCO DIVISION

GV/sr

NETWORK PROTECTION SCIENCES,   } No. 3:12-CV-01106-WHA
LLC   }
                                }
        Plaintiff,   }
                                }
        vs.   }
                                }
FORTINET, INC.   }
                                }
        Defendant.   }

        This is the Deposition of GLENN GARY MACKINTOSH, in
the above noted matter, taken at the offices of NORTON ROSE
FULBRIGHT LLP, Royal Bank Plaza, South Tower, 200 Bay
Street, Suite 3800, Toronto, Ontario, on the 5th day of
June, 2013.

A P P E A R A N C E S:
MICHAEL CUKOR   -- for the Plaintiff
 Gibbons P.C.
 One Pennsylvania Plaza
 37th Floor
 New York NY
 10119-3701
WILLIAM COOPER   -- for the Defendant
 Quinn Emanuel
 50 California Street
 22nd Floor
 San Francisco CA
 94111
ANTHONY L. MARKS   -- for Glenn Gary Mackintosh
 Perkins Cole LLP
 2901 N. Central Ave.
 Suite 2000
 Phoenix AZ
 85012-2788

G.G. Mackintosh - 3

INDEX OF PROCEEDINGS

G.G. Mackintosh - 4

1   GLENN GARY MACKINTOSH, sworn

2   EXAMINATION BY MR. CUKOR:

3   1.   Q.   Good morning. Would you please

4   state your name for the record?

5   A.   Glenn Gary Mackintosh.

6   2.   Q.   Where do you live?

7   A.   Toronto. Or do you need more

8   details?

9   3.   Q.   Toronto is fine. And that is where

10   we are today, right?

11   A.   Yes.

12   4.   Q.   My name is Michael Cukor and I

13   represent the plaintiff in this case, Network

14   Protection Sciences. Today I am going to be asking

15   you a series of questions and I hope you will do the

16   best you can to answer them; okay? One of the

17   things that I would like you to do is try and give

18   audio responses to my questions, since we will have

19   a written record of this later and nods and shrugs

20   won't be picked up; okay?

21   A.   Of course. Yes.

22   5.   Q.   Thank you. Have you ever had your

23   deposition taken before?

24   A.   No.

25   6.   Q.   So, I am going to try and ask clear

G.G. Mackintosh – 5

1   and direct questions. If you answer them, I will
2   assume you understood them. If you don't understand
3   them, please don't answer them; just tell me to
4   rephrase, and I will. Okay?
5   A.   Yes.
6   7.   Q.   Thank you. Who are you currently
7   employed by?
8   A.   Intel.
9   8.   Q.   And how long have you been an Intel
10   employee?
11   A.   Since August 1st of last year. So,
12   that is about 10 months.
13 9.   Q.   Okay.
14   A.   Something like that.
15 10.   Q.   And what is your job title?
16   A.   I am a software architect.
17 11.   Q.   Just at a high level, what kind of
18   projects do you work on?
19   A.   We were acquired by Intel and we are
20   a caching...the easiest description is a caching
21   company. It is called server side caching.
22 12.   Q.   Server side caching?
23   A.   M'hmm.
24 13.   Q.   That is not a firewall device?
25   A.   No, it is not a security-related

G.G. Mackintosh – 6

1   product.
2   14.   Q.   Thank you. And you said we were
3   acquired by Intel. Is that the company that you
4   were at before?
5   A.   Yes.
6   15.   Q.   What company was that?
7   A.   That company was Nevex Software
8   Technologies. That might be not...it is Nevex
9   "Something" Technologies. I don't know why I can't
10   remember the name right now.
11 16.   Q.   That is okay. How do you spell
12   Nevex?
13   A.   N-E-V-E-X.
14 17.   Q.   And are you employed by Intel in
15   Canada?
16   A.   Yes.
17 18.   Q.   And where was Nevex based?
18   A.   Toronto.
19 19.   Q.   What did Nevex do?
20   A.   Same thing. It is why they bought
21   us.
22 20.   Q.   Server side caching?
23   A.   Yes.
24 21.   Q.   Now, how long were you with Nevex?
25   A.   About two years, I think. Actually,

G.G. Mackintosh – 7

1   maybe a little longer.
2   22.   Q.   Approximately?
3   A.   In that ballpark.
4   23.   Q.   And before Nevex?
5   A.   I was effectively investing and...an
6   investor in various companies. Prior to doing that,
7   I had been involved in other start-ups.
8   24.   Q.   And generally what was your role in
9   the start-ups?
10   A.   Usually I was...well, it varied.
11   Sometimes I was involved in the software
12   development. Sometimes more...just more advisory
13   capacity. It varied.
14 25.   Q.   Can you describe what your technical
15   abilities are?
16   A.   I am a very good software architect.
17   Not a very good manager.
18 26.   Q.   Do you have any United States
19   patents?
20   A.   No.
21 27.   Q.   Do you know much about United States
22   patent law?
23   A.   Probably more than the average guy
24   on the street, but not a lot, no.
25 28.   Q.   Have you ever applied for a United

G.G. Mackintosh – 8

1   States patent?
2   A.   I have not. Companies I have been
3   involved in have, but I have never been involved in
4   the process.
5   29.   Q.   So you have never been an inventor
6   on an application for a United States patent?
7   A.   No.
8   30.   Q.   How come?
9   A.   A variety of reasons, I guess. A
10   lot of the stuff that I had worked on more recently,
11   the ideas weren't patentable. Actually, I should
12   clarify. I am not sure; my name might be on a
13   couple of provisional patents or a provisional
14   patent, but I am not entirely sure. That is,
15   something might be going through currently that I
16   might be on, but to be honest, I don't know the
17   answer to that question.
18 31.   Q.   How come?
19   A.   The most obvious one related to what
20   we are talking about now, and I don't know if you
21   want to get into that, but we decided not to patent
22   the transparency-related technology that we came up
23   with primary for the reason that we didn't have any
24   cash. We were a very cash tight company and we
25   didn't have the capital to...in order to patent it.

G.G. Mackintosh - 9

```
1    32.         Q.    Have you ever testified in a case in
2          the United States?
3                A.    No.
4    33.         Q.    If this case did go to trial in
5          September of this year, would you come to testify if
6          you were called?
7                A.    If I was asked to testify, I would
8          probably...
9                MR. MARKS:    He can't really answer that
10               because he is going to have to talk with
11               his lawyers about it.  He works for Intel,
12               so that would be a decision that Intel
13               would have to make jointly with him.  I
14               will let him answer the question, but the
15               reality is he is not going to be able to
16               answer that question with any certainty.
17               THE DEPONENT:    I would not be adverse to
18               testifying, if the circumstance arises.
19
20   BY MR. CUKOR:
21   34.         Q.    Has anybody talked to you about
22         that?
23               A.    No.
24   35.         Q.    Have you spoken to...
25               A.    Sorry, I should clarify.  Nobody has
```

G.G. Mackintosh - 10

```
1          asked me to come testify, if that is the question
2          you are asking.
3    36.         Q.    In what area are you making a
4          distinction?
5                A.    People have talked about whether
6          there might be a court trial and whether people
7          would have to go to it.  That is the extent of the
8          conversation.  So I don't want to say I have never
9          talked to anybody about going to court.  Nobody has
10         asked me to and I have never discussed going.
11   37.         Q.    Thank you for your complete answers.
12         Who did you speak with about the possibility of a
13         court trial?
14               A.    To be honest, I can't recall in
15         particular.  There are a number of us who were...
16         the names of which you already know; Rayan, Steve,
17         I, who are...who were around at that time and we are
18         all friends still.  And so obviously the topic comes
19         up.  Particular details, I really don't remember.
20         But of course the conversations happened about, you
21         know, what is going on with this stuff.
22   38.         Q.    Have you spoken to any of the
23         attorneys in this case?
24               A.    I have spoken to my attorney and
25         about a year ago, maybe over a year ago, I can't
```

G.G. Mackintosh - 11

```
1          remember the exact time frame, some...a lawyer, I
2          believe who was from Fortinet, and another lawyer
3          who I don't recall who he was representing came out
4          and talked to a group of us about Nevex and
5          BorderWare.
6    39.         Q.    Was that David Binney?
7                A.    I honestly don't know the names.  I
8          had their cards...
9    40.         Q.    Did he have a beard?
10               A.    Possibly.  I don't know.  I had
11         their cards on my desk for a long time and threw
12         them away about three months ago.
13   41.         Q.    Okay.  Do you remember the name of
14         the attorney from Fortinet?
15               A.    I am afraid...I apologize, I don't
16         know.
17   42.         Q.    Did they tell you about this
18         litigation?
19               A.    Yes.
20   43.         Q.    What did they tell you?
21               MR. COOPER:    Objection, form.  Calls for
22               attorney/client privilege.  Just putting
23               that on the record.
24               THE DEPONENT:    ████████████  ███████
25         ████  ██████  ████████████████
```

G.G. Mackintosh - 12

```
1          █████████████████████████████████
2          █████████████████████████
3          ████████████████████████████
4          ██████████████████████████████
5          ██████████████████████████████
6          ████████████████████████████
7          ████████  ██████████████
8
9    BY MR. CUKOR:
10   44.         Q.    Did they characterize the patent
11         involved in the litigation in any way?
12               MR. COOPER:    Objection, form.  Calls for
13               privileged communications.
14               THE DEPONENT:    ██████████████████
15         ████████  █████████████████████
16         ██████████   ████████████████████
17         ██████████████████████████████
18         ████████████████████████
19         ████████████████████
20
21   BY MR. CUKOR:
22   45.         Q.    Have you seen the patent that is in
23         suit in this case?
24               A.    No.  I have seen what looks maybe
25         like that document.  That is the only...
```

G.G. Mackintosh – 13

1   46.   Q.   The record won't be able to reflect
2   what you are talking about.
3   A.   I'm sorry. The only thing I saw
4   was...
5   47.   Q.   What is that production you are
6   talking about? Name of the case?
7   A.   It was the thing Fortinet...you sent
8   it to me.
9   48.   Q.   They can't help you.
10   A.   I apologize. It was a thing
11   Fortinet sent that...I think it was the adjustment
12   to...it was sent to the Canadian court to allow me
13   to have this deposition. That is the only thing I
14   saw.
15 49.   Q.   The letters rogatory?
16   A.   That sounds right.
17 50.   Q.   I believe it is the document you
18   were pointing at. So the only document you have
19   seen from this case is the one that required you to
20   appear today?
21   A.   Yes.
22   MR. MARKS: I just want to be clear. He
23   should not be answering about documents
24   that I provided him as his counsel.
25

G.G. Mackintosh – 14

1   BY MR. CUKOR:
2   51.   Q.   Just to be clear, you have not seen
3   the '601 patent?
4   A.   No.
5   52.   Q.   Do you know who invented it?
6   A.   I understand the patent has been...
7   was originally claimed by Milkyway and I believe, if
8   I remember the name correctly, from that document...
9   sorry, the letters rogatory, I think they said Hung
10   Vu. Which is a name I vaguely recall from 20 years
11   ago.
12 53.   Q.   What do you vaguely recall about
13   Hung Vu?
14   A.   We heard about Milkyway after we had
15   already been in business for a while, shipping
16   product and such. And we heard about a company up
17   in Ottawa that was doing a firewall. That was about
18   it. We pay attention to potential competitors, so
19   when a new firewall company came up, we...our
20   marketing guys took a look at it. But that is about
21   the extent of it.
22 54.   Q.   Do you remember Milkyway being a
23   competitor of JANUS.
24   A.   We never really saw them in a
25   competitive setting. We were already pretty much in

G.G. Mackintosh – 15

1   full flight at that point.
2   55.   Q.   So you were further developed?
3   A.   Yes.
4   56.   Q.   So you didn't encounter them in
5   competitive bidding situations?
6   A.   Not that I am aware of. We
7   were...we had achieved a significant...we were a
8   fair going concern by the time Milkyway showed up.
9   57.   Q.   I couldn't hear what the last thing
10   you said was.
11   A.   We were pretty much a strongly...we
12   were growing fairly quickly by the time Milkyway
13   showed up, so we were already selling down in the
14   States. I think we had already started selling in
15   Europe at that point.
16 58.   Q.   When did you start selling in the
17   States?
18   A.   I can't remember the exact time
19   frame. I know in...I was the R&D side. I know we
20   had a trade show in the States in early 1994, which
21   I was not at, and then shows... trade shows, sort
22   of, later in 1994. Which I was attending at.
23 59.   Q.   So the first trade show was in
24   Canada, right? That was COMDEX?
25   A.   The very first trade show we

G.G. Mackintosh – 16

1   attended was COMDEX in Canada, yes.
2   60.   Q.   That was in 1994 also, right?
3   A.   That was earlier than the U.S. trade
4   shows.
5   61.   Q.   And the U.S. trade shows came later?
6   That was in Las Vegas, correct?
7   A.   That was the first one I was at.
8   There was...I did not recall the earlier trade show
9   until looking at this...sorry, the letters rogatory.
10   And it touched on the Atlanta trade show where Phil
11   Trubey, who was our first U.S. reseller, became
12   aware of the product. I met Phil Trubey at a later
13   trade show but he had made contact with us at that
14   earlier trade show and started taking...took on the
15   product.
16 62.   Q.   So you didn't recall that?
17   A.   I was not at that trade show, so no.
18 63.   Q.   Okay. Tell me, what is the JANUS
19   Firewall?
20   A.   It was a transparent, easy to set up
21   firewall. Which also...as well as a firewall, it
22   included server capabilities; FTP, e-mail, et
23   cetera.
24 64.   Q.   Was it a transparent application
25   layer firewall?

G.G. Mackintosh – 17

1   A.   Yes. It had kernel modifications
2   and application level proxies.
3   65.   Q.   I'm sorry, would you repeat that?
4   A.   I said it had kernel modifications,
5   OS modifications, and application level proxies.
6   66.   Q.   Are those the things that make up a
7   transparent application layer firewall?
8   A.   The kernel modifications are key,
9   yes.
10 67.   Q.   And what were the kernel
11   modifications?
12   A.   Well, you are probably aware of some
13   of the terms. Basically, we had to convert it from
14   forwarding packets to accepting all packets. And
15   then essentially pretending...pretending that it was
16   not in the middle so that the other ends didn't see
17   it. It sort of modified the packets and
18   impersonated the other ends. So it had to be...the
19   firewall essentially put itself in promiscuous mode,
20   took everything and pretended to be who it wasn't.
21 68.   Q.   And to your knowledge, was JANUS the
22   first company to do that?
23   A.   Yes. JANUS wasn't the company;
24   JANUS was the software.
25 69.   Q.   Was JANUS the first product to

G.G. Mackintosh – 18

1   incorporate that?
2   A.   Yes.
3   70.   Q.   And I take it that that was well
4   received by the market?
5   A.   Very well.
6   71.   Q.   How come?
7   A.   Nothing else was transparent. Other
8   products required a lot of effort to put in place
9   and modified software. Transparency made it much
10   easier to deploy in an environment without having to
11   change the software and such. It made for a much
12   simpler installation and took away a lot of
13   expertise away from it.
14 72.   Q.   Why was that something that was
15   demanded by the market?
16   A.   The ability to drop it in without
17   having to modify all the software on your internal
18   network obviously makes it significantly cheaper to
19   deploy and easier to deploy.
20 73.   Q.   Did it make it less secure than
21   what...
22   A.   No.
23 74.   Q.   ...was traditional...let me ask it
24   again. Did the ease of use make it less secure than
25   what were the traditional, non-transparent

G.G. Mackintosh – 19

1   application layer firewalls?
2   A.   No. Sorry, I didn't mean to
3   overspeak you.
4   75.   Q.   That is okay. How come?
5   A.   It allowed the same levels of
6   attention to be paid to the information. It just
7   hid where the end points were.
8   76.   Q.   And which companies did this product
9   allow you to compete with?
10   A.   Everybody. All the firewall
11   products that were out there, none of them really
12   were as simple to deploy. So, it made us, you know,
13   a fairly in-demand product.
14 77.   Q.   Aside from ease of deployment, were
15   there any other advantages to having a transparent
16   application layer firewall?
17   A.   Easier to say that there is no
18   disadvantages to it. And its simplicity means it is
19   far more cost effective to deploy. So there is a
20   strong economic argument for it as well as a human
21   cost involved in modifying...having to change your
22   existing software.
23 78.   Q.   How about from the user perspective,
24   was there value in having a transparent application
25   layer firewall?

G.G. Mackintosh – 20

1   A.   Well, I guess I wasn't clear. The
2   lack of having to modify your software meant that
3   you could just use the existing software, which has
4   an impact on the user experience.
5   79.   Q.   What was the impact on the user
6   experience?
7   A.   They can continue to use the
8   software they are using. They don't have to use
9   specialized software.
10 80.   Q.   And was that something that was well
11   received by the end user?
12   A.   One of...well, I would...our product
13   was very successful, so, yes.
14 81.   Q.   And the company that made the JANUS
15   Firewall is called Border Networks?
16   A.   Border Network Technologies
17   Incorporated.
18 82.   Q.   BNTi?
19   A.   Yes.
20 83.   Q.   And when was BNTi formed?
21   A.   I believe we were incorporated in
22   December, but I don't know the exact date. We
23   met...the parties who ended up being the founders
24   met in late 1994. We decided to form the...we
25   formed the company in December and...sorry, December

G.G. Mackintosh - 21

1   of 1993. So we met in late 1993 and...
2   84.   Q.   Sorry.
3   A.   We met in late 1993 and formed...
4   started the company in December of 1993.
5   85.   Q.   So you said you met in late 1993.
6   Who did you meet in late 1993?
7   A.   The group of people who eventually
8   came together to form the company, myself, Steve
9   Lamb, Rayan Zachariassen and a company called Sea
10   Change. The two individuals from Sea Change were
11   John Alsop and Omaya Elguindi.
12   86.   Q.   John Alsop and who?
13   A.   Omaya Elguindi.
14   87.   Q.   And what were the circumstances
15   where you met these people?
16   A.   Steve and I had already started on
17   the idea of making a firewall product. There was
18   software that Rayan that I wanted to incorporate in
19   the product and I had known Rayan since grad school
20   so I went to him to talk to him about getting that
21   software. And he mentioned that he had been
22   approached by Sea Change to try to...because they
23   were interested in producing a firewall product.
24   And he suggested that we all meet and potentially
25   work on it together.

G.G. Mackintosh - 22

1   88.   Q.   So was this a time when there was a
2   demand for new firewall products?
3   A.   Firewalls were a fairly nascent
4   technology. There weren't really a lot of
5   commercially available firewall products. But there
6   was a lot of security concern, so, yes.
7   89.   Q.   And did you ever participate
8   personally in the sales of firewall products?
9   A.   I was not directly involved in
10   sales. I did do trade shows, as sort of the
11   technical person. And I took some support calls in
12   the early days when there weren't that many of us.
13   But not in direct sales, no.
14   90.   Q.   And what was your title at BNTi?
15   A.   Well, it would have changed a number
16   of times over time. So I don't remember any
17   specific titles. Obviously in the early days we
18   didn't have titles and later on I was VP of R&D, I
19   guess. In the last stage of the company before it
20   was purchased, I was the president of the company
21   for a while.
22   91.   Q.   Were you the primary architect of
23   the technology?
24   A.   Yes.
25   92.   Q.   How many people were in BNTi at the

G.G. Mackintosh - 23

1   end?
2   A.   At the very end, we employed about
3   100 people.
4   93.   Q.   And how many did you start with?
5   A.   Two. Actually, one. For a while,
6   Steve was the only employed guy who worked for us.
7   And then I kept my day job. Then I started working
8   full-time and we added...then we added a working guy
9   and rolled forward from there.
10   94.   Q.   What was your day job?
11   A.   I worked for the University of
12   Toronto in the external networking group. At that
13   point, I ran the group and we were responsible for
14   deploying CA*Net, which was the Canadian Backbone
15   Network, and ONet, which was the provincial backbone
16   network.
17   95.   Q.   And when did you stop working for
18   the University of Toronto?
19   A.   It would have been in 1994 some
20   time. I don't recall. Early 1994. I don't know.
21   96.   Q.   When did you become a BNTi employee?
22   A.   At that point.
23   97.   Q.   You don't know the date?
24   A.   If I knew one, I would know the
25   other.

G.G. Mackintosh - 24

1   98.   Q.   Okay. Was it before there was a
2   commercial release of the JANUS product?
3   A.   I believe so.
4   99.   Q.   Could it have been around that time?
5   A.   I believe it was before our first
6   trade show, but to be honest, I can't answer the
7   question. I don't know the date. I just don't
8   recall. I was working...while I worked for the
9   university, I was working evenings and weekends.
10   And the transition from working days as well, I just
11   don't remember the date.
12   100.   Q.   Who did the kernel modifications...
13   A.   I did. Sorry, I spoke over you
14   again. I apologize.
15   101.   Q.   That was a Unix kernel that you did
16   the modifications to; right?
17   A.   It was a Unix variant. It was the
18   BSDI code we licensed.
19   102.   Q.   When did you acquire that licence?
20   A.   I don't know.
21   103.   Q.   Do you remember how it came to be
22   that you got the licence?
23   A.   I don't know.
24   104.   Q.   Were you involved with the process?
25   A.   Probably.

G.G. Mackintosh – 25

1   105.   Q.   You just don't remember? Okay. Do
2   you remember when you worked on the modifications of
3   the kernel?
4   A.   It would have been early 1994, like
5   in the January time frame probably.
6   106.   Q.   Do you have a specific recollection
7   of it?
8   A.   No. Sorry, if you are looking for a
9   more exact date than that, no. Do I have a specific
10   recollection of working on the software at that
11   time? Yes.
12   107.   Q.   Where were you?
13   A.   We had offices in the UUNet Canada
14   building which was at 2 Yonge Street.
15   108.   Q.   And was that while you were employed
16   by the University of Toronto?
17   A.   Probably.
18   109.   Q.   Well, do you remember working on it
19   during regular business hours or...
20   A.   No, I can't...I am not avoiding the
21   question. I don't know.
22   110.   Q.   So you don't have a specific...
23   A.   I did get approval from the
24   University of Toronto to work on this as an outside
25   project. They weren't interested in it. They gave

G.G. Mackintosh – 26

1   me their approval to work on it.
2   111.   Q.   How did you secure that?
3   A.   I talked to my manager.
4   112.   Q.   Did you get anything in writing?
5   A.   I have no idea.
6   113.   Q.   You don't recall?
7   A.   I don't recall. You know, I would
8   have gone through...actually, I would have...I do
9   vaguely recall getting a document from my manager's
10   manager, like, up the chain. Now that you ask the
11   question, I do vaguely recall getting written
12   approval from...I can't remember his name. But,
13   yes, so I did. I apologize.
14   114.   Q.   Do you think you still have that
15   document?
16   A.   No.
17   115.   Q.   So when you were working on the
18   kernel, do you remember that you were working on it
19   on nights and weekends or during regular business
20   hours or you don't recall?
21   A.   I worked nights and weekends for two
22   years before and after, so I don't. It was a late
23   night when the idea came to us and I started working
24   on it essentially the next day. That would have
25   been in the, you know, as I said, January, possibly

G.G. Mackintosh – 27

1   early February but I think January time frame.
2   116.   Q.   Why do you recall that?
3   A.   Because it took us, you know, a
4   little bit of time to get that software running and
5   tested and working. Not very long; you know, a
6   couple of weeks. And it wasn't much after that, I
7   think it was in March, that we actually put a
8   product in place. So, you know, given that
9   constraint, I know about how long it took to make
10   things work. And I know the idea came to us fairly
11   early.
12   117.   Q.   So, you are basing that recollection
13   on the March date of when you had the product?
14   A.   Twofold. One, based on the March.
15   And also based on the fact that I know it was
16   slightly after the new year. It was almost at the
17   beginning of us working on the firewall product,
18   because we were working on a more typical non-
19   transparent proxy. So we were just starting to
20   create the firewall aspects of the product. And
21   then we came up with the concept that allowed us to
22   make it non-transparent. So, it was very early.
23   Based on the fact that we had...we hadn't even
24   finished writing the non-transparent proxy, so it
25   was very early in the process of creating the

G.G. Mackintosh – 28

1   product.
2   118.   Q.   So you decided to form BNTi before
3   you had the concept of a transparent application
4   layer firewall; correct?
5   A.   We just had the concept of doing a
6   firewall. The mechanisms for making it transparent
7   came to us later, yes.
8   119.   Q.   And after you decided to form a
9   company to manufacture a firewall, were you involved
10   in reading Internet posts about how firewalls are
11   developed?
12   A.   I kept up to date on firewall
13   technology and I actually...you know, being the sort
14   of technical guy and responding to technical queries
15   on the Internet about stuff, I was considered a
16   firewall expert and listed on some panels and stuff
17   like that at points.
18   120.   Q.   And you mentioned you responded to
19   some technical queries on the Internet. Was that on
20   Listservs?
21   A.   That would have been on various
22   newsgroups, probably some stuff on greatcircle.com.
23   You know, the Internet today is not what it was
24   then. So, it wasn't really...there wasn't the
25   concept of the web and blogs and such. These were

G.G. Mackintosh - 29

1   principally mailing lists and newsgroups.
2   121.   Q.   You mentioned greatcircle.com. What
3   is that?
4   A.   It was a company in the States ran
5   by Brent Chapman, I believe, who was considered to
6   be a sort of firewall expert. Although he did not
7   have a firewall product himself, he was...he
8   provided a forum for discussion and he had some
9   personal expertise in the field.
10 122.   Q.   And what was the greatcircle.com
11   post that you mentioned?
12   A.   I don't remember in specific. I
13   know I did respond to technical queries and
14   questions. And probably occasionally made reference
15   to our product. It was bad form to do sales
16   pitches, so I didn't do that. But I did talk about
17   firewalls, technology and you would naturally
18   occasionally make reference to, "And ours does
19   this".
20 123.   Q.   So, I'm sorry, it was a Great Circle
21   mailing list?
22   A.   It was a news...the concept, really,
23   is harder to follow today. But it was what is
24   called a newsgroup.
25 124.   Q.   And was it a newsgroup that was...

G.G. Mackintosh - 30

1   A.   Actually, you know what? I should
2   correct myself. It may have been a mailing list.
3   You know what? I don't know.
4   125.   Q.   Okay. So, Great Circle was either a
5   mailing list or a newsgroup or something similar.
6   But was it something that was dedicated to...
7   A.   Firewall technologies, yes. Sorry,
8   I went over you again.
9   126.   Q.   So let me just ask it so it is
10   clear. So the Great Circle mailing list was
11   something that was dedicated to firewall
12   technologies, right?
13   A.   Yes.
14 127.   Q.   And when did you first become aware
15   of it?
16   A.   I have no recollection. It just
17   was...when we started looking at firewalls, it is
18   one of those things that came up as an obvious well-
19   known resource.
20 128.   Q.   And did you use that resource?
21   A.   As I said, we both read and
22   participated in those groups. My participation
23   was...for most of the time, it was as an expert in
24   the field kind of thing. Providing information.
25 129.   Q.   And it was in the January/February

G.G. Mackintosh - 31

1   time of 1994 that you came up with the idea of
2   modifying the kernel; right?
3   A.   Yes.
4   130.   Q.   And do you remember if you were
5   aware of the Great Circle mailing list before BNTi
6   was formed?
7   A.   I would not have been aware of it
8   before we started working on firewalls.
9   131.   Q.   Had you worked on firewalls before
10   BNTi was formed?
11   A.   No.
12 132.   Q.   How did you come to be chosen to be
13   involved in firewall creation?
14   A.   I described running the group in
15   CA*Net and ONet and when I was running the group, I
16   had a lot of interaction with people...call them
17   customers. The people getting connected to the
18   Internet, which were the colleges and universities
19   in Ontario. And they were requesting...asking how
20   did they get various services running. They were
21   concerned about security. And you get asked that
22   question enough times, you think, "Well, maybe we
23   should do that".
24   Steve and I had already tried a number of
25   entrepreneurial efforts. One of which was a router

G.G. Mackintosh - 32

1   product, which made the creation of the firewall
2   product very easy. Because we were 90 percent of
3   the way to having a firewall done because we had a
4   router product.
5   133.   Q.   So what was the 10 percent that was
6   left to be done for creating a transparent
7   application layer firewall out of a router?
8   A.   The various kernel modifications to
9   do the transparency. We also did a number of
10   modifications to harden the kernel and make it more
11   difficult to penetrate. Development of the proxies
12   obviously, the application-level stuff, and a user
13   interface for configuration purposes.
14 134.   Q.   And are those things that you just
15   described primarily driving factors for the sale of
16   the JANUS product?
17   A.   The product, firewalls, were in
18   demand, so just a firewall would probably have sold
19   reasonably well. But the primary features of the
20   product that drove sales were the ease of use, ease
21   of setup, transparency aspects.
22 135.   Q.   What were the kernel modifications
23   that needed to be made?
24   A.   I believe we discussed this a little
25   bit earlier. But it was required to make the kernel

G.G. Mackintosh - 33

1   accept packets that were not destined for it and,
2   instead of forwarding those packets on, it accepted
3   them and passed them up the stack to the application
4   level.
5 136.   Q.   What specifically had to be done to
6   do that?
7   A.   The actual code changes? Too long
8   ago. I can't recall. I could...given time, I could
9   probably recall the exact changes. But essentially
10   you had to put the interfaces in promiscuous mode so
11   they would accept everything, even if it wasn't
12   actually destined for it. And then change...there
13   is a section in code in the kernel that would
14   determine whether the destination of the packet was
15   the box itself, any of its interfaces. And if it
16   was not, then mechanisms in the kernel would forward
17   the packet on. And we made the change to... instead
18   of forwarding the packet to accept the packet as if
19   it was destined for it and pass it up the stack.
20 137.   Q.   And is the code the best place to
21   verify when that occurred?
22   A.   Sorry, is the code?
23 138.   Q.   The code for the JANUS product the
24   best place to verify when that kernel modification
25   took place?

G.G. Mackintosh - 34

1   A.   Sorry, you mean...I apologize, I am
2   not fully understanding your question. Is the
3   location in the kernel the best place to make that
4   change; is that what you are asking?
5 139.   Q.   Let me ask it again. Thank you for
6   pointing out your confusion, my bad question. Is
7   the actual code that you wrote that modified the
8   kernel the best place to look to identify what the
9   specific changes to the kernel were?
10   A.   I am...I apologize, I am not a
11   hundred percent...we obviously believed at that
12   point that that was the best place to make the
13   changes, otherwise we would have made them somewhere
14   else. I am not really following the question and,
15   I'm sorry, I am not trying to be difficult, I just
16   don't.
17 140.   Q.   I understand that we are talking
18   past each other. It is my fault. From the legal
19   perspective of in this litigation identifying the
20   date for when the kernel modifications actually took
21   place, I am asking, would the source code of the
22   kernel modifications be the best place to see when
23   those kernel modifications were actually made?
24   A.   Well, yes, because until you made
25   the source code modifications, you didn't make the

G.G. Mackintosh - 35

1   changes that would make it work. So when those
2   kernel modifications were made, it would identify
3   when the transparent functionality was in place,
4   yes.
5 141.   Q.   Thank you. Have you ever heard of
6   Steve Bellovin?
7   A.   The name doesn't ring a bell, I am
8   afraid.
9 142.   Q.   Marcus Ranum?
10   A.   Yes.
11 143.   Q.   What do you know about Marcus Ranum?
12   A.   I just remember the name from back
13   in the firewall days. I don't recall the exact...I
14   believe he was involved in another firewall company
15   at the time. I don't recall more than that.
16 144.   Q.   Do you know the name Angelos
17   Keromytis?
18   A.   It is not ringing a bell. Again,
19   these names probably would have been familiar to me
20   back then but I don't...they are not ringing a bell
21   now.
22 145.   Q.   You are not staying as up to date on
23   firewall technology as you used to?
24   A.   When I left the company that
25   acquired us, I sort of took a break from stuff for a

G.G. Mackintosh - 36

1   while and stopped paying attention to firewalls in
2   particular since I wasn't allowed to work on them
3   anyway and did other things. So, yes, I stopped
4   paying attention to the firewall technology in, it
5   would have been, 1996/1997 time frame; something
6   like that.
7 146.   Q.   Is that when BNTi was acquired?
8   A.   BNTi was acquired...I would have to
9   look to be certain, but I think it was in 1996. And
10   I had to work for...I worked for the company that
11   acquired us, Secure Computing. I worked for them
12   for a year.
13 147.   Q.   And...
14   A.   It was after that, obviously, that I
15   stopped paying attention to firewalls. Not while I
16   still worked for them.
17 148.   Q.   Do you recall how much money Secure
18   Computing acquired BNTi for?
19   A.   We were acquired for stock. I don't
20   remember the exact dollar figure. I know...I do
21   recall that the net of cash, it was about 50/50
22   because we were acquired...when we were acquired, we
23   became about half of the stock of the company minus,
24   I think, whatever cash was on hand.
25 149.   Q.   I don't really understand that

G.G. Mackintosh - 37

1   answer, I'm sorry.
2   A.   I don't remember the exact numbers,
3   so let's say Secure had, you know, 50 whatever in
4   stock outstanding. When we were acquired...and they
5   had a certain amount of cash. The agreement
6   was...or the argument we made was that we were worth
7   as much as they were and in terms of the...so, take
8   the cash out of the picture, whatever that dollar
9   value turns into in stock. And net of that cash,
10   when the transaction is finished we should be equal
11   in value to what Secure was prior to that.
12 150.   Q.   And did you successfully make that
13   argument?
14   A.   Yes.
15 151.   Q.   And was the basis for that argument
16   the JANUS firewall product?
17   A.   Yes.
18 152.   Q.   Anything else?
19   A.   That was the only product we had.
20   Well, sorry, at that point it wouldn't have been
21   called JANUS; it would have been called BorderWare
22   at that stage.
23 153.   Q.   But it is the same product?
24   A.   It was an evolution of that product.
25 154.   Q.   It was a transparent application

G.G. Mackintosh - 38

1   layer firewall?
2   A.   Yes. We changed the name. That is
3   pretty much all.
4   155.   Q.   And do you have a rough
5   approximation for what Secure Computing was worth at
6   that time?
7   A.   I don't know what this...no.
8   156.   Q.   Do you know if it was in the order
9   of tens of millions of dollars?
10   A.   More than that.
11 157.   Q.   Hundreds of millions?
12   A.   Probably in the hundred range. To
13   be honest, I...I am not avoiding the question. I
14   would be...if I made statements, they would be
15   incorrect because my memory is not accurate as to
16   the value.
17 158.   Q.   Do you remember, did you make a
18   significant amount of money personally as a result
19   of that?
20   A.   Yes.
21 159.   Q.   Enough to not work for a little
22   while?
23   A.   Yes.
24 160.   Q.   Do you remember approximately how
25   much you made personally?

G.G. Mackintosh - 39

1   A.   It varied over time. My shares were
2   locked in for different tranche periods. Obviously
3   after Secure announced that they were buying us,
4   their stock price went up. So, it became worth
5   more. And after a year, when I finally managed to
6   get most of the shares out, it was worth a lot less.
7   So, you know...it varied widely. It was worth about
8   half of...it was...the holding was worth about half
9   when it was finally disposed of as when it started.
10 161.   Q.   Did you make tens of millions of
11   dollars?
12   A.   I believe the number was probably in
13   the...I think it was in about the $14,000,000 range.
14 162.   Q.   And what percentage of the BNTi
15   stock did you own?
16   A.   I believe I held about 17 percent at
17   that stage, because we had a couple of rounds of
18   venture investment.
19 163.   Q.   So that is actually fairly
20   consistent with what you remembered before about
21   making about $100,000,000...in the $100,000,000
22   range as a company; right?
23   A.   As I said, it went up a lot and then
24   it went down a lot. So, there was a wide variation
25   in the value. I am not trying to be avoiding it; I

G.G. Mackintosh - 40

1   just...you know, what I ended up with was an amount
2   that I...what it was worth at various points.
3   164.   Q.   So, that transparent application
4   layer firewall turned out to be a pretty good
5   invention?
6   A.   Yes.
7   165.   MR. CUKOR: We have been going for about
8   an hour. Why don't we take a break for a
9   couple minutes?
10
11 --- A BRIEF RECESS
12
13 GLENN GARY MACKINTOSH, resumed
14 CONTINUED EXAMINATION BY MR. CUKOR:
15
16 --- EXHIBIT NO. 501 : News release entitled "JANUS
17   Firewall Server Securely and Cost-
18   Effectively Connects Private
19   Networks to Internet"
20
21 BY MR. CUKOR:
22 166.   Q.   Mr. Mackintosh, during the break I
23   marked as an exhibit as Exhibit 501. It has the
24   Bates number on it of FORT-NPS058631 through 32. It
25   is a news release entitled "JANUS Firewall Server

G.G. Mackintosh - 41

1   Securely and Cost-Effectively Connects Private
2   Networks to Internet". I am going to give that
3   document to you now.
4   A.   What is a Bates number?
5   167.   Q.   The number on the bottom.
6   A.   Sorry, what is it?
7   168.   Q.   It is a method of identifying just
8   different pages, and I think the person who came up
9   with the system is named Bates. I think it was
10   based on a mechanical device that...
11   MR. MARKS: That nobody ever uses
12   anymore.
13
14   BY MR. CUKOR:
15   169.   Q.   Mr. Mackintosh, do you have Exhibit
16   501 in front of you?
17   A.   Yes.
18   170.   Q.   Have you seen this document before?
19   A.   I would certainly have seen it at
20   the time.
21   171.   Q.   It looks familiar to you?
22   A.   The names on it are people that
23   worked for us and with us at the time.
24   172.   Q.   Do you see the first full paragraph
25   that begins with the word "Toronto"?

G.G. Mackintosh - 42

1   A.   Yes.
2   173.   Q.   Can you read that first sentence
3   into the record, slowly?
4   A.   "...Toronto, July 7th, 1994. BNTi
5   is
6   pleased to announce the Canadian launch of
7   the JANUS Firewall Server, a PC-based
8   software product developed in Canada.
9   JANUS will be demonstrated for the first
10   time at COMDEX Canada with W6459 in the
11   SkyDome. Product availability in Canada
12   will be August 1st through Sea Change
13   Corporation, the Canadian distributor..."
14   174.   Q.   Does that appear to be correct to
15   you?
16   A.   I can't comment on the dates and
17   stuff. I assume that it is correct.
18   175.   Q.   Do you have any reason to believe
19   that those dates are incorrect?
20   A.   No.
21   176.   Q.   Okay.
22   A.   This would not have represented when
23   we first installed the software, though.
24   177.   Q.   It represents when it is first
25   available in Canada, though, correct?

G.G. Mackintosh - 43

1   A.   It was first publicly announced. I
2   believe we had...I believe we actually had installed
3   systems before that point.
4   178.   Q.   Do you believe it is incorrect when
5   it says:
6   "...JANUS will be demonstrated for the
7   first time at COMDEX Canada..."
8   A.   They would be talking about publicly
9   demonstrated. It was demonstrated many times before
10   that, but not in a public forum.
11   179.   Q.   Okay.
12   A.   In a show...trade show environment.
13   But it had been seen many, many times before that.
14   180.   MR. CUKOR: I have what I have marked as
15   Exhibit 500. It is Bates labelled FORT-
16   NPS059093 through 059095. It appears to be
17   an e-mail. I am going to give you that
18   document.
19
20   --- EXHIBIT NO. 500 : E-mail dated October, 1994 from Rod
21   Adkins to Milton F. Lopez
22
23   BY MR. CUKOR:
24   181.   Q.   Mr. Mackintosh, do you have Exhibit
25   500 in front of you?

G.G. Mackintosh - 44

1   A.   Yes.
2   182.   Q.   And do you see on the second to last
3   page, the last couple words on the page are "Rod
4   Adkins"?
5   A.   M'hmm.
6   183.   Q.   Do you know who he was?
7   A.   He was our...I believe his title was
8   director of marketing, but basically he was our
9   sales and marketing guy at the time. Our third
10   employee.
11   184.   Q.   Your third employee? Have you ever
12   seen Exhibit 500 before?
13   A.   It doesn't look familiar, but I
14   am...I can't answer the question. I don't know.
15   185.   Q.   And does this document appear to be
16   Mr. Adkins' response to a question or series of...or
17   an e-mail that was posted at greatcircle.com?
18   A.   From the format of it, it would
19   appear to be. Without reading the entire thing and
20   sitting here and doing that, I can't answer that
21   accurately. But it looks from the format of
22   brackets and stuff that, yes, it looks like a
23   response to an e-mail question.
24   186.   Q.   It is a pretty short e-mail. Do you
25   mind reading the whole thing so you feel comfortable

G.G. Mackintosh - 45

1   with it?
2   A.   Okay.
3   187.   Q.   Have you finished reviewing it?
4   A.   Yes.
5   188.   Q.   Did anything in it strike you as
6   inaccurate?
7   A.   No. It talked about that people
8   have been using it since February of 1994, which is
9   about the right time frame I talked about earlier.
10   189.   Q.   Do you see on the bottom of page 2
11   of the document Mr. Adkins talks about upcoming
12   shows at COMDEX in Las Vegas?
13   A.   Yes.
14   190.   Q.   And before when you were testifying
15   about remembering that there was a show before the
16   Las Vegas show, if you look back onto the first page
17   of Exhibit 500, towards the beginning of the e-mail,
18   the user had written:
19   "...JANUS is new. It began its market life
20   in the U.S. in September..."
21   Do you see that?
22   A.   Yes.
23   191.   Q.   And Mr. Adkins' response is:
24   "...Although this is true, it is somewhat
25   misleading. Yes, BNTi launched JANUS in

G.G. Mackintosh - 46

1   the U.S. at NetWorld and Interop in
2   September..."
3   Is that the trade show that you said earlier that
4   you recalled happened in the U.S. before the Las
5   Vegas show?
6   A.   Possibly. I don't know.
7   192.   Q.   You don't recall specifically?
8   A.   I was not at that trade show so I
9   don't...I have no recollection of when it occurred.
10   I didn't attend.
11   193.   Q.   Do you have any reason to doubt that
12   that statement is inaccurate?
13   A.   No. I just can't...I can't verify
14   it.
15   194.   Q.   So it could have been?
16   A.   I assume the document is correct.
17   195.   Q.   So it is possible that BNTi launched
18   JANUS in the U.S. in September of 1994?
19   A.   Yes.
20   196.   Q.   But the date that you could verify
21   is later at the Las Vegas show?
22   A.   I was at the Vegas trade show, yes.
23   197.   Q.   Okay.
24   A.   I know we had made contact with Phil
25   Trubey prior to that date. So he was already doing

G.G. Mackintosh - 47

1   stuff before COMDEX.
2   198.   Q.   Let me ask you about the term beta
3   site. Have you heard that term before?
4   A.   M'hmm.
5   199.   Q.   What is a beta site?
6   A.   They are an early deployment of the
7   software while it is still in its testing phases.
8   They are sort of earlier adopter-type companies who
9   are interested in testing out the product before you
10   are ready for a full scale launch of the product.
11   200.   Q.   And do those companies typically
12   have agreements that are different from the
13   agreements that the general public would have when
14   they purchase a commercially available product?
15   A.   I don't know exactly what you mean
16   by "different". Often they are testing the product.
17   Sometimes they are testing it for free or paying
18   less for the product.
19   201.   Q.   Do they have a separate beta test
20   agreement with the developer?
21   A.   I don't recall...the answer to that
22   broad general statement could be yes. If you are
23   asking whether we had those kind of agreements, I
24   don't know.
25   202.   Q.   I was going to ask that after, so I

G.G. Mackintosh - 48

1   will ask it now. Do you recall specifically whether
2   JANUS had specific beta test agreements with its
3   beta test partners?
4   A.   I have no idea.
5   203.   Q.   And do you recall what the
6   confidentiality provisions of the beta test
7   agreements would be?
8   A.   I have no idea.
9   204.   Q.   Okay. How about resellers? Did
10   JANUS have agreements with its resellers?
11   A.   We would have, yes.
12   205.   Q.   And do you know what the
13   confidentiality provisions of those agreements
14   contained?
15   A.   I have no idea.
16   206.   Q.   And would the agreements that JANUS
17   had with its resellers be different than the
18   agreements JANUS would have with the typical end
19   user of its product?
20   A.   I have no idea.
21   207.   Q.   Okay.
22   A.   The sales and marketing side was not
23   my part of the business.
24   208.   Q.   Did the JANUS firewall product do
25   packet filtering?

G.G. Mackintosh - 49

1   A.   I am not sure what you exactly mean
2   by packet filtering. If you are talking about
3   blocking certain types of traffic based on what that
4   traffic is, then yes.
5   209.   Q.   And would it do that blocking before
6   the packet was passed all the way up to the
7   application layer?
8   A.   No, the filtering was done at the...
9   sorry. The bulk of the filtering was probably done
10   at the application level. There may have been some
11   filtering done at the kernel level by nature of not
12   setting up listeners for things that we did not want
13   to pass through. So, it would have been at multiple
14   levels.
15   210.   Q.   So even though the packet was
16   accepted at the kernel level, it might not have been
17   passed up; it could have been dropped after that?
18   A.   Some packets would have been dropped
19   at a very low level if we were not interested in
20   that type of traffic, yes.
21   211.   Q.   Was the JANUS firewall able to do
22   user authentication?
23   A.   No. Sorry, let me rephrase the
24   answer. We did not do user authentication of
25   traffic that was going internal to external or

G.G. Mackintosh - 50

1   external to internal. Obviously we had to...you had
2   to have user authentication for the administrator of
3   the box to configure the box.
4   212.   Q.   So just for configuration, there had
5   to be authentication. But users did not have the
6   ability...or the administrator did not have...let me
7   start again. The JANUS firewall did not give the
8   administrator the ability to add custom levels of
9   user authentication?
10   A.   For traffic passing through the
11   firewall?   No.
12   213.   Q.   How did the JANUS firewall perform
13   network address translation?
14   A.   Again, we discussed this earlier,
15   but it accepted all traffic and examined the
16   packets, examined the destination that...because it
17   was not the destination for most of the traffic that
18   it was proxying, it examined what the actual
19   destination was in the IP packet and used that
20   destination to establish a secondary connection to
21   that actual destination. That secondary connection
22   came from the firewall itself and then it kept the
23   initial channel, that is the initial requested
24   channel from inside, it kept that open and
25   essentially forged the return packets back to that

G.G. Mackintosh - 51

1   destination to look like they came from the ultimate
2   destination, even though the return packets
3   originated at the firewall.
4   214.   Q.   So, talking more specifically about
5   how that was accomplished, was there a proxy process
6   involved?
7   A.   Yes.
8   215.   Q.   And was there a proxy process that
9   was bound to specific ports that listened to those
10   ports for incoming traffic?
11   A.   Yes.
12   216.   Q.   And did that process itself open a
13   communication session or did it call another process
14   to open a communication session?
15   A.   You are talking about the secondary
16   connection to the outside? It would have opened it
17   itself. At least, my recollection is that it would
18   have opened it itself. Again, we are talking 20
19   years ago. My memory could be incorrect. But my
20   recollection is that the application level opened
21   the connection to the remote site.
22   217.   Q.   Do you believe it was the same
23   process that was listening to the ports?
24   A.   Yes.
25   218.   Q.   And if I gave you the JANUS software

G.G. Mackintosh - 52

1   that has been produced in this case, could you
2   verify that?
3   A.   Sorry, I don't understand the
4   question.
5   219.   Q.   If I put in front of you a laptop
6   that contained the source code that has been
7   produced in this case from JANUS, could you verify
8   what you just told me about which process initiated
9   the communication sessions?
10   A.   It would probably take me a while to
11   refresh my memory on the way the code worked. But
12   given an appropriate amount of time, I could remind
13   myself how the code worked and establish that. I
14   wouldn't be able to do it by just staring at...
15   looking at the page and answering it in a couple
16   seconds, but, yes.
17   220.   Q.   I will ask you to do that, if you
18   don't mind, in a little bit.
19   A.   It could take a while. It has been
20   a long time since I looked at this code.
21   221.   Q.   Well, if you feel that it is
22   impossible for you to do now because of the
23   environment, you can just tell me that. If you feel
24   like, after looking at it, it is coming back
25   quickly, maybe it will refresh your recollection.

G.G. Mackintosh – 53

1   A.   So you are just talking about the
2   application proxy itself or...because, as we
3   discussed earlier, that is only part of the stuff
4   because the kernel level modifications are required
5   to make it...
6   222.   Q.   I am talking about the proxy.
7   A.   Okay.
8   223.   Q.   And let me ask my question
9   differently to see if it refreshes your
10   recollection. Do you recall there being a separate
11   proxy that listened to each port and then calling a
12   process that would only stay alive during the
13   communication session and then was terminated after
14   the communication session?
15   A.   Okay. The way networking software
16   typically works, and again it has been a long time
17   since I wrote this code, is that you have an
18   establish listener on a port. When a connection
19   comes in, it will generally spawn off a new process
20   which actually does the actual work, establishes the
21   secondary connection, handles the communications for
22   that particular communication pathway while the
23   original listener continues to listen for new
24   connections. And that secondary process handles
25   only that single communication path and then when

G.G. Mackintosh – 54

1   that path gets closed down, it goes away. And the
2   original listener continues...will spawn off new
3   ones for each...if that is what you are asking, that
4   is my recollection of the way it worked, yes.
5   224.   Q.   Yes. That was what I was asking.
6   So, the JANUS firewall product...so, in the JANUS
7   firewall product, the process that established the
8   communication sessions was not bound to any specific
9   port?
10   A.   Yes, it was. Each type of proxy,
11   like for an FTP proxy or a Telnet proxy or whatever,
12   each had an individual specific listener listening
13   only on specific ports that we were proxying. There
14   were not listeners on every other port. Only things
15   that the firewall was...now, I am stating this as
16   absolute. I should be clear this is from memory. I
17   may be making mistakes. But my recollection is that
18   we...that when you configured the software and you
19   said I want proxies on this type, this type, this
20   type and also it had the ability to set up generic
21   proxy for things that may come about afterwards, you
22   could then say, okay, I also want to proxy the
23   traffic on port 80. You would configure all those
24   things and the software would establish listeners
25   only on those specific ports. They would not listen

G.G. Mackintosh – 55

1   for all ports. It would only...we had individual
2   listeners bound to each of those ports that were to
3   be proxied, and that is the process that I was
4   talking about. There was a specific individual
5   process for each of those bound ports. Not one that
6   listened to all of them.
7   225.   Q.   My question was a little inartful.
8   I meant the process that was bound to the ports or
9   bound to each individual port was not the same
10   process that established the communication sessions?
11   A.   Yes.
12   226.   Q.   Did the JANUS firewall allow for FTP
13   from external to internal without authentication?
14   A.   From external to internal? No. We
15   did not gateway FTP traffic into the internal
16   network. The product had an FTP server that resided
17   on the product. And so externally you gained access
18   to the FTP server on the product itself, not to an
19   internal server.
20   227.   Q.   So you had to authenticate?
21   A.   I don't...to be honest, I don't
22   remember the FTP mechanism. But as I...absolutely.
23   I recall that you had to log into an FTP server.
24   Typically, there was...most FTP servers provided
25   what was called an anonymous login, which basically

G.G. Mackintosh – 56

1   meant you authenticated but didn't. You provided an
2   anonymous user with no password and any...but, yes,
3   you would have to authenticate. But there may not
4   really be any actual password. But, yes, that
5   service was provided by the firewall but not through
6   the firewall.
7   228.   Q.   And that step of authentication that
8   you just described would mean that the external user
9   would be aware of the existence of the firewall?
10   A.   The external users were only aware
11   of the existence of the firewall. No external users
12   saw past the firewall. Internal users were not
13   aware of the existence of the firewall.
14   229.   Q.   So it was transparent from the
15   internal side, but not transparent from the external
16   side?
17   A.   Right. If you were establishing an
18   FTP connection from the inside of the...from inside
19   the firewall to an FTP server outside the firewall,
20   you would not notice the existence of the firewall
21   at all. It was totally transparent, out bound.
22   Inbound, the FTP would be...and this was true for
23   all inbound traffic. The only visible entity was
24   the firewall itself.
25   230.   Q.   So the JANUS firewall was not

G.G. Mackintosh – 57

1   transparent from outside to inside?
2   A.   Correct.
3   231.   Q.   Okay. Did the JANUS firewall do any
4   data sensitivity checking?
5   A.   I am not sure what you mean by the
6   question.
7   232.   Q.   Are you familiar with the term deep
8   packet inspection?
9   A.   Yes.
10   233.   Q.   What is deep packet inspection?
11   A.   My recollection is that it meant
12   examining the traffic passing through to determine
13   the nature of the traffic and whether there was
14   anything about it that was untoward. The original
15   versions of the product examined the data only
16   insofar as was necessary to transmit the traffic and
17   to establish the type of traffic, Telnet or whatnot.
18   The early versions did not do more than that. I
19   have some recollection that as the software grew, we
20   may have done more in depth analysis of the actual
21   traffic. But the early versions did not.
22   234.   Q.   So as the JANUS firewall software
23   evolved, more features were added?
24   A.   Yes. JANUS/BorderWare. Throughout
25   this conversation, you have been using JANUS but it

G.G. Mackintosh – 58

1   essentially just got renamed. There was no real
2   difference and as the product evolved I don't really
3   think of them as two different products. So I am
4   probably using the names interchangeably because I
5   don't even recall when we actually made the name
6   change.
7   235.   Q.   Okay. Do you know why you made the
8   name change?
9   A.   I believe that there was a company
10   in the states unrelated to the security marketplace.
11   I think they may have even been a financial-type
12   company that were using the name Janus and so to
13   avoid any potential problems, we decided to rename
14   the product.
15   236.   Q.   So as your U.S. market started to
16   grow...
17   A.   It would have been before then. I
18   think it was fairly early on, but I don't recall
19   when.
20   237.   Q.   Before the U.S. market grew?
21   A.   I honestly can't answer the
22   question. I'm sorry.
23   238.   Q.   Okay.
24   A.   It is referred to here as JANUS,
25   so...

G.G. Mackintosh – 59

1   239.   Q.   It was after 1994; right?
2   A.   I have no idea.
3   240.   Q.   Well, it was after...
4   A.   It is presumably after this date,
5   which is in 1994.
6   241.   MR. CUKOR: Okay.
7
8   --- EXHIBIT NO. 502 : Printout from greatcircle.com
9   website
10
11   BY MR. CUKOR:
12   242.   Q.   Mr. Mackintosh, I have put in front
13   of you what has been marked as Exhibit 502. It has
14   Bates number NPS358 through 360. And it is a
15   printout from the greatcircle.com website.
16   A.   M'hmm.
17   243.   Q.   Have you seen this document before?
18   A.   I am going to have to read it. I
19   haven't finished reading it, but it doesn't sound
20   familiar. I apologize, I am just having a hard time
21   with his grammar and understanding what he is...
22   244.   Q.   Take your time.
23   A.   He is not an English speaker, so I
24   am having to try and interpret what he is saying a
25   little bit. Sorry, I shouldn't say not an English

G.G. Mackintosh – 60

1   speaker; obviously his first language isn't English,
2   so it makes the...okay.
3   245.   Q.   Have you reviewed the document?
4   A.   M'hmm.
5   246.   Q.   And do you think you may have seen
6   it before?
7   A.   I don't recall having seen it before
8   but I could have seen it before.
9   247.   Q.   And what is the document?
10   A.   It is a document from Hung Vu in
11   February, which would have been after we already had
12   this working. February, 1994. It is a document by
13   Hung Vu saying, "I would like to do this kind of
14   thing but I don't really know how to do it. How
15   would I do it and how much work would it be", and he
16   describes a desire to have a...you would have to
17   make some assumptions here, but what sounds like an
18   attempt to make a transparent outbound proxy by
19   doing similar things to what we discussed about
20   earlier. Listening for inbound...sorry, outbound
21   traffic, intercepting that traffic and forwarding
22   it. He clearly in here states it is something he
23   wants to do, has never tried to do and he doesn't
24   really know how much work it would be. In fact, he
25   is asking how much work it would be in order to

G.G. Mackintosh - 61

1   implement this.
2   248.   Q.   And did you respond to Hung Vu's e-
3   mail ever?
4   A.   I don't recall having done so. I
5   don't recall. I don't...I don't recognize this e-
6   mail off the top of my head. If I had seen it, I
7   probably would have been surprised because, as far
8   as I was aware, nobody else was sort of thinking
9   about how to do this. We already had...at this
10   point, our product would already have been doing
11   this.
12   249.   Q.   Does Exhibit 502 demonstrate
13   conception of a transparent application layer proxy?
14   A.   It seems to.
15   250.   Q.   And what documentary evidence do you
16   have that the JANUS firewall product was developed
17   at this point?
18   A.   I don't believe I have any documents
19   left from that period of time.
20   251.   Q.   And did you read the kernel
21   modifications that Mr. Vu described in Exhibit 502?
22   A.   He doesn't actually describe kernel
23   modifications. He said you would have to modify it
24   in order to do this, but he doesn't describe any
25   modifications. In fact, he says...he is

G.G. Mackintosh - 62

1   basically...it looks like he is asking how to do it.
2   He is saying, "How much work is involved, I can't
3   tell right now", so he clearly hasn't done this yet.
4   He has got an idea and he is trying to figure out
5   how to do it.
6   252.   Q.   And do you see on the second page
7   where he says:
8   "...I guess a quick fix would be..."
9   A.   Yes.
10   253.   Q.   And is he talking about kernel
11   modifications in that portion?
12   A.   Yes, he is talking about kernel
13   modifications. Yes.
14   254.   Q.   And do you believe that what he
15   describes there would suggest to one of ordinary
16   skill in the art how to modify the kernel to
17   accomplish what is required for a transparent
18   application layer firewall?
19   A.   I think from this you could
20   probably...with enough knowledge of the kernel, you
21   could probably come up with a mechanism similar to
22   the one that we implemented.
23   255.   Q.   I want to show you a different
24   document. Before I show you, I think I have asked
25   you this and I am just going to ask you again. You

G.G. Mackintosh - 63

1   have never seen the United States patent 5623601
2   that was issued to Hung Vu?
3   A.   No.
4   256.   Q.   What was the last number of the
5   document I gave you? The last exhibit number.
6   A.   502.
7   257.   MR. CUKOR: Thank you.
8
9   --- EXHIBIT NO. 503 : Collection of printouts from
10   greatcircle.com website
11
12   BY MR. CUKOR:
13   258.   Q.   Mr. Mackintosh, I have put in front
14   of you what has been marked as Exhibit 503. It has
15   Bates range on it FORT-NPS058679 through 058702. It
16   is a collection of printouts from the
17   greatcircle.com website. I will give you as long as
18   you want to familiarize yourself with it, but it is
19   a long document and I am going to be directing your
20   attention to specific parts so you don't have to...
21   A.   If you want me to specifically be
22   able to comment on the entire thing, I would have to
23   read it all. If you are just going to ask me to
24   comment on certain sections, I can read just the
25   sections you are asking about.

G.G. Mackintosh - 64

1   259.   Q.   Okay, we will do that.
2   A.   I will note that the address I gave
3   you before of 2 Yonge Street was clearly wrong
4   because this says 1 Yonge street. So apparently it
5   is across the road.
6   260.   Q.   Can I direct your attention to the
7   page 058688?
8   A.   Yes.
9   261.   Q.   And what I would like you to look at
10   is what appears to be an e-mail from Steve Lamb in
11   response to another post on the Great Circle
12   website.
13   A.   You are talking about the one that
14   ends on that page or the one that starts on that
15   page?
16   262.   Q.   The one that ends on that page. You
17   can turn to the previous page to read the whole
18   thing. I will let you do that.
19   A.   Yes.
20   263.   Q.   So I am going to direct your
21   attention to the paragraph that begins, "That is
22   quite true", on page 058688. First, have you ever
23   seen this document before...this e-mail before?
24   A.   I don't recall it, but I may have.
25   264.   Q.   At the end of that paragraph, Mr.

G.G. Mackintosh – 65

1   Lamb says:

2   "...I didn't claim that changing IP source

3   and destination address in packets is what

4   we do..."

5   What did he mean by that?

6   MR. MARKS: Objection. Calls for

7   speculation.

8   THE DEPONENT: I would have to make an

9   educated guess as to what he means. But I

10   presume what he is saying is that we don't

11   modify the IP source and destination

12   addresses down in the kernel of the network

13   layer; that we do it at the application

14   layer.

15

16   BY MR. CUKOR:

17   265.   Q.   What is the consequence of that?

18   A.   I don't understand the question.

19   266.   Q.   I am just trying to ask the question

20   in a way...

21   A.   I am not trying to be difficult. I

22   just don't understand the question. I'm sorry.

23   267.   Q.   No, I am having difficulty. I am

24   really just trying to understand what that means.

25   And what is the difference between modifying the

G.G. Mackintosh – 66

1   packets at the kernel layer and at the application

2   layer?

3   A.   In terms of functionality or

4   difficulty or...

5   268.   Q.   Functionality.

6   A.   Presumably, you could do it in

7   either location. There is a reference here to

8   having to do more than just change the IP address in

9   the packet. If you were doing it at the network

10   level, you would have to do more than just change

11   the IP address because you are changing contents...

12   information of the actual IP packet itself. So more

13   than just that will have to be changed for the

14   packet to still be internally consistent, if you

15   will, and not be thrown away. So, to do it at the

16   network level, you would have to do a number of

17   things to make the packet still a valid packet

18   versus at the application level, you have to do

19   different things. They are just different

20   mechanisms for doing it. You could do it in either

21   place, depending on how you programmed it.

22   269.   Q.   Did that program decision have any

23   effect on the ability for an external source to

24   identify the IP address of the original user?

25   A.   You could do it in either location

G.G. Mackintosh – 67

1   in a manner that would make the...that would hide

2   the source address. You could do it in either

3   location.

4   270.   Q.   And which location did the JANUS

5   firewall product do that in?

6   A.   We did it at the...the early

7   versions of the firewall definitely did it all at

8   the application layer. I believe but don't know for

9   absolute certainty that later versions of the

10   software moved some of that work down into the

11   kernel itself to avoid the overhead of going higher

12   up the stack. So, I believe it did it probably both

13   ways at different points in time.

14   271.   Q.   And when do you believe the kernel

15   became involved with rewriting the source IP

16   addresses?

17   A.   As I said, I don't recall that

18   directly. I wasn't doing R&D work at that stage. I

19   was telling people what to do at that stage. I know

20   at some point we were trying to improve the

21   throughput of the product by reducing the amount of

22   traffic going up to the application layer. When we

23   were doing that, I don't recall.

24   272.   Q.   But it was some time after you were

25   able to hire people to work for you?

G.G. Mackintosh – 68

1   A.   Yes.

2   273.   Q.   Would that be in the 1995/1996 time

3   frame?

4   A.   I don't know. It could be.

5   274.   MR. CUKOR: Let me take a minute off the

6   record to review my notes.

7

8   ---   DISCUSSION OFF THE RECORD

9

10   BY MR. CUKOR:

11   275.   Q.   Earlier in the day, we briefly

12   discussed Milkyway, the company. Do you recall

13   that?

14   A.   I recall discussing it, yes.

15   276.   Q.   And what can you tell me about what

16   you recall about Milkyway?

17   A.   All I recall is that, as I suggested

18   earlier, we as a company had existed for a while.

19   We had a product out there. I recall hearing about

20   this company, which I believe was in Ottawa, and

21   that they were coming out with a firewall product.

22   That is really about the extent of my recollection.

23   277.   Q.   Do you remember the name of their

24   firewall product?

25   A.   I assumed it was Milkyway, but, no.

G.G. Mackintosh – 69

1   278.   Q.   Do you remember knowing anything
2   about their intellectual property?
3   A.   No.
4   279.   Q.   Have you heard the name of the
5   company, Bevertec?
6   A.   Sorry?
7   280.   Q.   Bevertec.
8   A.   It doesn't ring a bell.
9   281.   Q.   Does Black Hole...
10   A.   Yes, that was a firewall product
11   that I have heard the name of. I don't know
12   anything about the product or I don't recall
13   anything about the product, but I heard that was a
14   firewall product.
15   282.   Q.   Do you remember it being a
16   competitive product?
17   A.   To be honest, at this stage, I don't
18   remember when they came into play. I don't remember
19   how competitive they were. I just remember the name
20   at this stage.
21   283.   Q.   How about SecureIT, does that sound
22   familiar?
23   A.   I am afraid that doesn't. It
24   probably was there and I just don't recall it.
25   284.   Q.   And earlier, we talked about that

G.G. Mackintosh – 70

1   you had formed BNTi before you came up with the
2   concept of a transparent application layer firewall;
3   correct?
4   A.   Yes.
5   285.   Q.   And you were the person that came up
6   with the concept of transparent application layer
7   firewall?
8   A.   Steve Lamb and I together.
9   286.   Q.   And how did that occur?
10   A.   We were leaving work and one of us,
11   it might have been Steve, said, you know, "What if
12   we do something like this?" And initially I said,
13   "No, that won't work for such and such"...I had a
14   little more technical depth than Steve. And then
15   after that point, "But if we do this too and this
16   and this and this"...well, this obviously took a
17   much longer period than the description I am giving
18   you right now. Then this would work and it would be
19   transparent and, you know, we...this occurred in
20   front of an elevator. We were...as I said, we were
21   leaving work. We were waiting for the elevator when
22   the idea came up. We let the elevator go by and
23   started scribbling notes on a big envelope that I
24   had with me. And went back and forth throwing ideas
25   around, we eventually came up with the...all the

G.G. Mackintosh – 71

1   mechanics that would be required for the transparent
2   firewall product to work, the kernel modifications.
3   And about an hour or so later, we went home. I took
4   the envelope and the next day started cooking it.
5   287.   Q.   Do you have that envelope still?
6   A.   No.
7   288.   Q.   What was the date of that meeting?
8   A.   I can't give you a date. It would
9   have been in the January, early February time frame.
10   As I said, it was very early in the lift. In fact,
11   I am pretty sure it was probably in January but I
12   can't establish that absolutely. It was very early
13   in the product development stage because it was as
14   we were just starting to write the proxy
15   applications. And so instead of writing non-
16   transparent versions, which is standard typical
17   SOCKS-based stuff, we implemented these instead. So
18   there was never a version of the product that
19   actually did not have this transparent capability.
20   It was the only implementation of the firewall we
21   ever implemented. That was right from the very
22   early stages.
23   289.   Q.   Would you have already started
24   writing other code that was not transparent at that
25   point?

G.G. Mackintosh – 72

1   A.   We were just starting...just
2   starting to work on the proxies. So we hadn't
3   actually written any. We had...there was public
4   domain examples of this kind of stuff out there. I
5   believe we had started looking at them. And then
6   instead of implementing something like that, we
7   implemented the transparent versions.
8   290.   Q.   So you were still at the collect
9   information stage?
10   A.   We were...again, there were public
11   domain firewall products out there. And we had
12   looked at...we had looked at that kind of software
13   and the SOCKS-based implementations. And it was
14   around that stage that we came up with the solution.
15   291.   Q.   And in doing that research, you also
16   used the Great Circle forum; right?
17   A.   I don't know if we were aware of
18   Great Circle at that stage, to be honest. We may
19   have been, we may not have been. I honestly can't
20   recall. When we started this, as I said, I came
21   from a networking background and we had a router
22   product and we were looking at evolving that router
23   product into a firewall product. So we came at it
24   from a very different direction than people who were
25   already potentially immersed in firewall

G.G. Mackintosh - 73

1   environment. So, I honestly can't say what...that
2   we had stumbled upon greatcircle.com before or
3   after. I just don't recall. You know, we
4   definitely were looking at... that is a big
5   spiderweb. Sorry.
6   MR. MARKS: You are talking about
7   outside the window?
8   THE DEPONENT: Yes. I'm sorry, I got
9   distracted by the spiderweb in the window.
10   Sorry.
11
12   BY MR. CUKOR:
13   292.   Q.   It is okay. Let me ask you a
14   different question and we will go on. You mentioned
15   that conversation where you and Steve came up with
16   the idea of transparent application firewall
17   happened while waiting for an elevator after work;
18   correct?
19   A.   M'hmm.
20   293.   Q.   Do you recall what building that was
21   in?
22   A.   1 Toronto Street.
23   294.   Q.   I'm sorry?
24   A.   I'm sorry, 1 Yonge Street. Toronto
25   Street was a much later office.

G.G. Mackintosh - 74

1   295.   Q.   And when did you get that office?
2   A.   The Yonge Street office?
3   296.   Q.   Correct.
4   A.   UUNET Canada was a company owned by
5   Rayan Zachariassen. And he basically had some extra
6   space in his office and he let us use that from day
7   one.
8   297.   Q.   From December?
9   A.   Yes.
10   298.   Q.   And do you believe that this
11   conversation occurred during the weekday or weekend?
12   A.   I have no recollection.
13   299.   Q.   Are there any documents that exist
14   to establish that that conversation took place?
15   A.   No. I don't believe I ever wrote
16   the, sort of, elevator story down on a bulletin
17   board or anything at any point. It has been
18   described to a number of people over the years. I
19   have no documentation to establish the date.
20   300.   Q.   Okay. Are you being compensated for
21   your time today?
22   A.   No.
23   301.   Q.   Just by Intel, right?
24   A.   Well, I am not...I work for Intel
25   and I guess I told them I was taking the day off,

G.G. Mackintosh - 75

1   but they are probably not going to charge me for it.
2   302.   Q.   Okay. And if I asked you to come to
3   trial in September in the Northern District of
4   California and offered to pay your expenses, would
5   you come?
6   A.   I would have to consult with
7   counsel. So, I don't know.
8   303.   MR. CUKOR: Okay. I may have additional
9   questions after Mr. Cooper asks some
10   questions based on what he asks, but right
11   now I am done and I thank you for your
12   testimony. I am going to pass the witness.
13
14   EXAMINATION BY MR. COOPER:
15   304.   Q.   Will Cooper. I represent the
16   defendant, Fortinet. I will try not to be...try not
17   to make you repeat yourself too much, but we will
18   have to cover some of the terrain that we have
19   already.
20   A.   That is okay. My wife says I repeat
21   myself anyway.
22   305.   Q.   You mentioned earlier today that you
23   worked for the University of Toronto?
24   A.   At that point in time.
25   306.   Q.   And while you were there, could you

G.G. Mackintosh - 76

1   describe what you were working on right before you
2   left, that last period before you left?
3   A.   For the University?
4   307.   Q.   Yes.
5   A.   As part of CA*Net, we modified some
6   IBM computer hardware to remodify the software to
7   make it into a router product that we used in
8   CA*Net. And we, in ONet, we distributed and set up
9   routers around Ontario...sorry, I should finish. In
10   CA*Net, we deployed those routers throughout the
11   provinces. I think we may have also sent them up to
12   the Yukon. I don't remember exactly, but basically
13   we put in place the Canadian Backbone Network and
14   the Ontario Backbone Network. The Canadian Backbone
15   Network connected down to the States and connected
16   ultimately to provide Internet connectivity and the
17   ONet network connected to CA*Net to get Internet
18   connectivity. The primary customers were colleges
19   and universities, although that ultimately got
20   expanded to allow private connections as well. In
21   the early stages, there was no public Internet,
22   no...sorry, there was no private companies providing
23   Internet connectivity. And so we were it. Later
24   on, obviously private companies started to provide
25   Internet connectivity in Canada as well. But that

G.G. Mackintosh - 77

1   wasn't there when CA*Net and ONet first got started.
2   So we basically deployed the Internet in Canada.
3   308.   Q.   And when you left the University of
4   Toronto and moved to working for a private company,
5   did your day-to-day change a lot in terms of what
6   you were working on?
7   A.   Well, yes, it changed a lot because
8   I stopped working on any of that stuff and only
9   worked on our product. Prior to stopping working
10   for the University, I was working on our stuff on my
11   own time. And after stopping working for the
12   University, I basically worked all the time, and I
13   mean all the time, for Border.
14 309.   Q.   So you had some familiarity with the
15   firewall technology at the point you left the
16   university?
17   A.   Not anything in terms of actual
18   implementation or real functionality. I knew that
19   there was firewall products out there and that they
20   provided security for networking connectivity. They
21   were a security mechanism. And that is about the
22   limitation of my knowledge. When I was...before we
23   decided to form BNTi and started doing our own
24   firewall, I described earlier, sort of, the...being
25   asked questions by the various colleges who were

G.G. Mackintosh - 78

1   connecting to ONet how to get..."How do I provide
2   this security?" And I would say, "Well, there are
3   firewall products out there that you can..." most of
4   them were, sort of, not...were not easy to
5   implement. But there were firewall products out
6   there and I would sort of say, you know, "Go look
7   here and here and here", but I didn't actually ever
8   investigate because my role wasn't to actually do
9   that. I was providing the networking functionality.
10   So I didn't actually know any details about
11   firewalls or their functionality before we decided
12   to actually go and build one.
13 310.   Q.   Why don't we turn back to Exhibit
14   501, Bates stamp 058631. It is the news release we
15   looked at earlier. And if you could read the top
16   heading just beneath "News Release" into the record.
17   A.   "...JANUS Firewall Server Securely
18   and Cost Effectively Connects Private
19   Networks to Internet..."
20 311.   Q.   Okay. And the name here at the top
21   is Rod...excuse me, what is the name here at the
22   top, the individual?
23   A.   Rod Adkins.
24 312.   Q.   So, as we talked about earlier, this
25   discusses a public event where the JANUS technology

G.G. Mackintosh - 79

1   was presented; is that right?
2   A.   M'hmm.
3   313.   Q.   Was this the first time that the
4   JANUS technology was shown to people?
5   A.   No. As I said in the early
6   discussions, this was the first trade show
7   demonstration of the product. The product had been
8   demonstrated to a number of potential customers
9   prior to this and was actually installed at a number
10   of sites prior to this. The first beta customer was
11   in March of 1994.
12 314.   Q.   And who was that customer?
13   A.   If my memory serves me correctly, it
14   was Rogers Canada.
15 315.   Q.   And could you describe how the
16   technology was installed and in what form it was
17   installed?
18   A.   Sea Change, who was one of the
19   founding partners but was also our reseller, would
20   have actually done the installation. BorderWare...
21   BNTi provided...we created software. Resellers
22   often sold just the software or sold hardware and
23   software together as a package. I don't know what
24   particular variant they...that Sea Change installed
25   at Rogers. I would guess that it was a combined

G.G. Mackintosh - 80

1   hardware/software package where they pre-installed
2   the software and took it out and put it in place in
3   Rogers. Omaya Elguindi was the person at Sea Change
4   who did the installation.
5   316.   Q.   So, in March of 1994, there was a
6   company...
7   A.   There was a fully functional product
8   in March of 1994 in place in a third-party company
9   running the transparent software.
10 317.   Q.   Were there any other installations
11   at that time?
12   A.   That would have been the first one.
13 318.   Q.   Do you know when the next one came?
14   A.   I believe the product was installed
15   at Delrina. I know it got installed at Spar
16   Aerospace.
17 319.   Q.   Could you name the company and also
18   their location as you are listing them?
19   A.   Spar Aerospace, I believe, was in
20   Montreal. Delrina, I don't recall. Those would
21   have been two of the other really early ones. I
22   don't remember more than that?
23 320.   Q.   And where is Rogers located? A
24   general geographic area is sufficient. If it is a
25   state or a...

G.G. Mackintosh - 81

1   A.   Rogers is based in Toronto, but they
2   operate wider than Toronto. I don't know where the
3   specific installation was. Because it was done
4   through Sea Change, all I know is it went to Rogers.
5   I actually have absolutely no knowledge of where
6   physically that resided.
7   321.   Q.   Okay. In addition to installations,
8   you mentioned that there were presentations. A good
9   number of them. Is that right?
10   A.   Yes. But, again, they would have
11   been done by Sea Change, who was our primary
12   reseller in the early days. They were out pitching
13   it all over the place.
14   322.   Q.   Do you know some locations that they
15   went and pitched?
16   A.   I am afraid I don't.
17   323.   Q.   Do you know if they pitched in the
18   United States or in Canada; at that level?
19   A.   They eventually pitched in the
20   United States. And we eventually had other
21   distributors in the United States. I don't know
22   when they started doing that. I am afraid I can't
23   answer more than that.
24   324.   Q.   And during the customer
25   presentations, was literature handed out describing

G.G. Mackintosh - 82

1   the technology?
2   A.   I would assume so. We did have
3   literature. And usually you give it to customers.
4   I can't really say yes or no, because I didn't do
5   it. I wasn't present.
6   325.   Q.   Got it. During this time period in
7   other contexts did you distribute literature that
8   described the technology?
9   A.   We would have. But, again, I don't
10   know exactly how widely any documentation was
11   distributed prior to this sort of public
12   announcement versus more directly to individuals.
13   326.   Q.   So, before the trade show mentioned
14   here in July, 1997, were there any other general
15   categories of...
16   A.   Sorry, you said July, 1997.
17   327.   Q.   I'm sorry, July 7th, 1994. Thank
18   you. Were there any other categories of
19   presentations to the public other than installations
20   that we talked about and the presentations to
21   potential customers?
22   A.   I don't recall.
23   328.   Q.   We can set this aside. So we talked
24   a little bit earlier...you talked a little bit
25   earlier about trade shows. I have a good sense

G.G. Mackintosh - 83

1   of...
2   A.   Sorry, my phone is buzzing. I
3   apologize.
4   329.   Q.   Sure. We talked earlier about trade
5   shows. I just want to get a handle on any specifics
6   that we might have left out about what trade shows
7   that you are aware of and what trade shows that you
8   went to. We talked about the COMDEX trade show in
9   July, Canada.
10   A.   M'hmm.
11   330.   Q.   And there was also the trade show in
12   Atlanta, the Networld one.
13   A.   I can't establish too much about
14   that one because, as I said, I wasn't at that one.
15   331.   Q.   You weren't there. But you were at
16   the one in July in Canada?
17   A.   I was at the one in Canada...you
18   know what? I am, like, 95 percent positive I would
19   have been at the one in Canada. But to be honest, I
20   don't recall the trade show itself. It was a pretty
21   busy time.
22   332.   Q.   Okay.
23   A.   But I am sure I would have been
24   there providing, you know, technical expertise for
25   people coming by. But I don't recall much about the

G.G. Mackintosh - 84

1   trade show. I remember the ones I had to travel to
2   because I had to travel.
3   333.   Q.   Which ones did you have to travel
4   to?
5   A.   Vegas and New York were two of the
6   earlier ones.
7   334.   Q.   And what was the time for the one in
8   Vegas?
9   A.   I can't remember the exact date. It
10   would have been COMDEX in Vegas. And we could
11   establish the time frame by looking up when COMDEX
12   in Vegas actually occurred, but I don't remember the
13   exact date and neither do I recall the exact date of
14   the...of the New York show. I just remember it was
15   at J. Javits Center.
16   335.   Q.   Do you remember if they were in
17   1994?
18   A.   I am positive that COMDEX was in
19   1994. The one in New York may have been in early
20   1995. I don't know. I know it was after the Vegas
21   show.
22   336.   Q.   And at these trade shows, a working
23   version of JANUS was running?
24   A.   Yes. In fact, I am not certain but
25   I believe prior to the Vegas show, we already had a

G.G. Mackintosh – 85

```
1        U.S. distributor, Phil Trubey.
2   337.        Q.    And what was Mr. Trubey doing?
3              A.    He was packaging the software with a
4        hardware and selling that as a package.
5   338.        Q.    Do you know when he started doing
6        that?
7              A.    No.  Somewhere between the Atlanta
8        trade show and the Vegas trade show, as I understand
9        it.
10  339.        Q.    The Atlanta trade show that was in
11       September of 1994?
12             A.    I don't know when the Atlanta trade
13       show was, I am afraid.  Not having been there, I
14       don't recall anything about it.
15  340.        Q.    And at these trade shows, where you
16       are displaying working versions of JANUS, those
17       working version had transparent application level
18       proxies?
19             A.    The only product we ever constructed
20       was a transparent firewall.  We never had a product
21       that wasn't.  So from day one, it was a transparent
22       firewall.  So, yes, the product that we deployed
23       then was that product.
24  341.        Q.    And at these trade shows, how would
25       people, including yourself, go about showing
```

G.G. Mackintosh – 86

```
1        potential customers how the product worked?
2              A.    If I recall correctly, we
3        essentially had a couple of computers.  The trade
4        shows typically had Internet connectivity and we
5        would have the JANUS firewall connected to the trade
6        show network and we would have a computer inside the
7        firewall, effectively.  And we would...so we would
8        have the firewall's configuration screens up and the
9        other computer connected to the Internet through the
10       firewall.  Showing the transparency of connectivity.
11  342.        Q.    So people that were at the trade
12       show would come up to the booth, so to speak, and
13       there would be screens that they could look at?
14             A.    Yes.
15  343.        Q.    That would display...
16             A.    One of them would be the firewall
17       and the other would be something running...
18       connecting through the firewall, yes.
19  344.        Q.    And at that time, when you were
20       discussing with the customers, the topic of
21       transparency was a big part of the conversation?
22             A.    Yes.  As mentioned, there were
23       essentially three pillars of the product that were,
24       sort of, its primary sale features.  Transparency
25       and ease of configuration were two of the key
```

G.G. Mackintosh – 87

```
1        features.  Transparency probably the most impactful
2        one.
3   345.        Q.    Going back to Exhibit 501.
4              A.    M'hmm.
5   346.        Q.    At those trade shows, the
6        functionality that was being showed to people was as
7        described in this press release?  And you can take a
8        minute to read through it.
9              A.    Sure.
10  347.        Q.    I just want to make sure it is an
11       accurate representation of what was publicly
12       available at that time.
13             A.    Yes.  And I will note that I may
14       have implied something earlier when you were
15       asking...sorry, when Michael was asking about
16       authentication.  I had actually forgotten about the
17       VPN capabilities...sorry, not VPN.  VPN came later.
18       But we did actually allow external customers to
19       actually connect through their own internal
20       connections and we authenticated those users.  I had
21       completely forgotten about that.  We supported a
22       number of different authentication mechanisms in the
23       product, including, as is mentioned here,
24       CRYPTOCard, to authenticate users who...external
25       users to be able to access the inside network.  I
```

G.G. Mackintosh – 88

```
1        had completely forgotten about that, but it is
2        mentioned in here and, yes, we did actually have
3        that functionality as well.
4   348.        Q.    Just to make sure we have a clear
5        record, I am going to repeat my last question.  The
6        JANUS functionality is accurately described in the
7        press release that is Exhibit 501; is that correct?
8              A.    Yes.
9   349.        Q.    At the trade shows, were all the
10       people that attended free to come and see the
11       presentation of JANUS?
12             A.    Yes, we had a booth and people would
13       just walk up and see the product.
14  350.        Q.    There was no VIP access or other...
15             A.    No.
16  351.        Q.    Okay.
17             A.    We were trying to sell it.  We
18       wanted as many people to see it as possible.
19  352.        Q.    At this time where you were showing
20       JANUS at trade shows, can you describe the public
21       use and public knowledge of JANUS in the United
22       States?
23             A.    No.  Actually, I...I don't know in
24       the July time frame that this is, I can't give you
25       information about the extent of knowledge out there.
```

G.G. Mackintosh – 89

1   I know there were discussions on bulletin boards and
2   stuff like that, but I have no knowledge of how
3   pervasive that would have been. But people in the
4   business would have known about it.
5 353.   Q.   There were numerous examples of the
6   JANUS technology being displayed in a functional
7   form in the U.S. at that time; is that accurate?
8   A.   As of the Canadian trade show?
9 354.   Q.   Yes.
10   A.   I don't...I can't answer the
11   question. I am afraid I can't remember the time
12   frames.
13 355.   Q.   As far as you can remember, that
14   would be accurate roughly around that time; within a
15   matter of months? Can you answer that?
16   A.   I would be going from a flawed
17   memory and making statements that I can't back up.
18 356.   Q.   Fair enough.
19   A.   There are others that could probably
20   give more definitive answers about that. As I said,
21   I wasn't in the marketing side.
22 357.   Q.   That wasn't your area.
23   A.   No. I made the technology.
24 358.   Q.   I touched a little bit earlier on
25   materials that were handed out at the trade shows.

G.G. Mackintosh – 90

1   Was it a situation where people would come up to the
2   booth, talk to them, and you would have stacks of
3   brochures, that sort of thing, to hand to them for
4   them to take?
5   A.   Typically. In fact, we probably
6   wouldn't even have to talk to them. They probably
7   just grabbed them.
8 359.   Q.   Do you have any recollection of what
9   the content was of those brochures and advertising
10   materials?
11   A.   It probably would have been a
12   variation of this kind of description, talking about
13   the functionality of firewall. It probably also
14   talked about the ease of configuration, through the
15   user interface.
16 360.   Q.   When you say "this kind of
17   description", you are referring to Exhibit 501?
18   A.   Sorry, I am referring to 501, which
19   described the transparent nature of the product.
20 361.   Q.   Switching gears a little bit, you
21   mentioned that you and Steve Lamb came up with the
22   original idea together.
23   A.   M'hmm.
24 362.   Q.   When you were outside of the
25   elevator and scribbling on an envelope, about how

G.G. Mackintosh – 91

1   long was that interaction where you were going back
2   and forth and taking notes about your idea?
3   A.   At least an hour. Long enough that
4   we sat down on the floor instead of standing up.
5 363.   Q.   And did you discuss this idea with
6   people other than Steve after you came up with it,
7   other co-workers and the like?
8   A.   Probably with Rayan.
9 364.   Q.   I'm sorry, with who?
10   A.   Rayan Zachariassen. And probably
11   with John Alsop and Omaya Elguindi, who were the
12   five original founders.
13 365.   Q.   And you started coding the next day,
14   is that right? From the time you started coding,
15   how long did it take you to get to where you felt
16   like you had the invention in a way that it could be
17   used?
18   A.   Pretty much the day we came up with
19   the concept, I was pretty sure how to do it. It
20   probably took a few weeks to actually do the work.
21 366.   Q.   And this was in January of 1993, is
22   that right?
23   A.   That is what I believe. It would
24   have been...it was January, perhaps early February,
25   but it was in...

G.G. Mackintosh – 92

1 367.   Q.   And this was 1993?
2   A.   No, sorry, you said 1993. 1994.
3 368.   Q.   1994?
4   A.   The company started in December of
5   1993. And in January to early February of 1994
6   would have been when we implemented the...came up
7   with the idea and implemented the features.
8 369.   Q.   And to confirm what I believe you
9   have already said, at the time you came up with this
10   idea you didn't have any knowledge of Hung Vu's idea
11   that you saw today on...
12   A.   No, I did not hear about Milkyway
13   until after we were...we had...we were a functioning
14   product. And we were attempting to make sales. And
15   then we heard of this company called Milkyway, who
16   was also a Canadian company. And that is probably
17   the only reason we even heard of them was because
18   they were another Canadian company, and there
19   weren't many. So, that is...I just knew of them
20   because of that.
21 370.   Q.   Roughly how long...I know there is
22   not going to be a date, but roughly how
23   long...specific date, excuse me...after you and
24   Steve Lamb came up with the idea until you heard
25   about Milkyway?

G.G. Mackintosh - 93

1   A.   It would have been much later, but I
2   have no concept.
3   371.   Q.   Years?
4   A.   No, it wouldn't have been...I don't
5   think it would have been years. I don't know when
6   they first came out with the product. I honestly
7   don't know...we wouldn't have heard of them until
8   they actually had a product and were trying to
9   market it. When that occurred, I don't know.
10   372.   Q.   And by the time you heard of them,
11   JANUS was fully functional and on the market?
12   A.   Yes. Sorry, I keep forgetting I
13   can't nod. Yes.
14   373.   Q.   By March of 1994, did JANUS have the
15   fundamental...the source code, the JANUS source
16   code, did it have the fundamental concepts of the
17   JANUS product?
18   A.   It was fully implemented, yes.
19   374.   Q.   Do you know what date,
20   approximately, it was fully implemented?
21   A.   As I said, it would have been in
22   the...well, we would have started in the January,
23   early February time frame and probably would have
24   been finished some time mid-February.
25   375.   Q.   Of 1994?

G.G. Mackintosh - 94

1   A.   Yes.
2   376.   Q.   So, it had transparency via
3   modification of the kernel instead of routing
4   packets of the BSDI Unix to disable IP forwarding?
5   A.   Yes.
6   377.   Q.   That had passing the packet to an
7   application level proxy?
8   A.   Yes.
9   378.   Q.   And it could apply rules?
10   A.   Yes.
11   379.   Q.   Did all later versions of JANUS
12   contain that same functionality?
13   A.   Yes.
14   380.   Q.   Who decided what features and
15   functionality JANUS would have?
16   A.   It was a collaborative effort
17   between...typically between myself and Steve. In
18   the early stages, anyway. You know, I would
19   typically figure out what was technologically
20   feasible and Steve and I were both actually...would
21   do code work. I would do the more complicated
22   stuff, the kernel work, that kind of stuff. Steve
23   would do some of the other stuff.
24   381.   Q.   What made the kernel work more
25   complicated?

G.G. Mackintosh - 95

1   A.   Kernel work, just by its very
2   nature, is a more sensitive and more demanding
3   environment to make changes. You have to know what
4   you are doing because you can...obviously, the core
5   of the operating system, if you are modifying it, it
6   can have dramatic effects. And the transparency
7   feature was only one of the changes that we had to
8   make.
9   382.   Q.   Did it have any additional core
10   features other than those I just asked you about?
11   And if I need to repeat them, I am more than happy
12   to.
13   A.   As I said, it had the transparency
14   features. It had a user interface that made it...
15   very easy to configure. It had application servers
16   built into the product, such as FTP, e-mail, et
17   cetera. Those were built into the product itself
18   and configurable through the user interface. It had
19   a number of kernel modifications that were made for
20   security reasons, not just transparency reasons, to
21   harden the kernel and make it both more difficult to
22   attempt to penetrate and also resistant to
23   being...to any penetration or anything being loaded
24   onto the firewall that would actually be able to be
25   executed. We made a number of kernel modifications

G.G. Mackintosh - 96

1   to effectively harden the product and make it more
2   secure.
3   383.   Q.   Did those core features change at
4   all in 1994?
5   A.   The basic concepts of transparency
6   were in place from day one. Obviously, we added
7   more configurability, more functionality, more
8   stuff. The product got more hardened. As time went
9   on, we constantly improved the product. But the
10   core features of transparency and ease of
11   configuration were there from the start.
12   384.   Q.   The coding process that took place
13   immediately after you and Steve Lamb came up with
14   the idea, were you the sole writer of the source
15   code?
16   A.   I wrote most of it. Steve Lamb
17   would have written some of it. I would have done
18   all the kernel work. He might have done a bit of
19   work on the application proxy side.
20   385.   Q.   The lion's share was done by you?
21   A.   Pretty much. Steve worked on the
22   code and...but his focus...he was initially...
23   sorry. Initially, he would have been doing code
24   development work like me. And then as time went on,
25   he moved more towards the other things that we

G.G. Mackintosh – 97

1   needed; sales, marketing, administrative, that kind
2   of stuff. During the early days, he would have been
3   working on the various other application level
4   aspects of the product.
5   386.   Q.   Where in the JANUS source code would
6   we look to find the transparency?
7   A.   I would not have remembered that.
8   The documents that I have that were presented
9   earlier, the one we referred to that I can't
10   remember the name of...what did you call it? Sorry,
11   you can't answer my questions. The document that
12   Fortinet provided to the Canadian court system in
13   order to...
14   387.   Q.   The letters rogatory.
15   A.   Letters rogatory. In order to have
16   me be here referred to two particular source files.
17   I would not have recalled the name of those source
18   files without having read that document. I can't
19   even confirm that that is necessarily actually the
20   places where the modifications were made. It was 20
21   years ago. I can tell you what we did. Which
22   particular files we did it to, I would not recall.
23   388.   Q.   Can you tell me what you did?
24   A.   As described earlier, we...the
25   portions of the kernel where it decides whether a

G.G. Mackintosh – 98

1   packet is for it or not, we converted so that it
2   believed everything was for it. And therefore all
3   packets belong...all traffic was for it and
4   therefore needed to be passed up the stack to
5   applicational proxies, which then determined whether
6   they were really the destination or whether it
7   needed to do the forging of the addresses in order
8   to...I keep using that forging word in a court
9   setting. But basically we would pretend to be who
10   we really weren't in order to provide the
11   transparency feature. So the kernel work was
12   basically just...the kernel work related to the
13   proxies. There was a lot of other kernel stuff
14   related to security, but the kernel work related to
15   the proxies and the transparent nature of the
16   proxies was principally just saying, "Everything is
17   for me".
18   389.   Q.   Before the first commercial product
19   was released, when was the code complete? The code
20   writing complete.
21   A.   Code writing is never complete.
22   390.   Q.   Was there an iteration that was the
23   one just before it went and became a commercial
24   product? And if so, what time was that iteration
25   complete?

G.G. Mackintosh – 99

1   A.   I can't give you an absolute date
2   when, you know, the proxy...when the kernel work and
3   the proxy work was done such that we could say,
4   okay, here is a connection through the firewall and
5   it works. I don't remember the exact date. It
6   would have had to have been finished some time in
7   the February time frame because we put a product in
8   place in March.
9   391.   Q.   February of 1994?
10   A.   February of 1994. So it would have
11   had to have been completed some time in that time
12   frame in order for us to put something in place in
13   March. So it would have been finished, sort of,
14   probably in mid to late February or maybe early
15   March. But we obviously had to have it complete,
16   functional, tested. We had to have it working to
17   deploy it. So, that provides an upper bound. That
18   is the best answer I can give you.
19   392.   Q.   It is a good answer. The commercial
20   product, you said, was ready in March; is that
21   right?
22   A.   It was deployed in March. We had a
23   customer running the software in March of 1994.
24   393.   Q.   At what point in this process of
25   coming up with the idea and putting it on the market

G.G. Mackintosh – 100

1   did you and other people involved, start sharing
2   with others that you had this product in the works?
3   A.   I don't know.
4   394.   Q.   Was there that sort of
5   communications before the commercial release or did
6   it just get released and along with it the
7   advertisement?
8   A.   It probably would have been fairly
9   low key until the public announcement. Sea Change
10   was out there pushing it to various people, but
11   I...I don't know, but it is probably unlikely that
12   an announcement like this would have gone out...
13   sorry, I am referring to the news release, 501. It
14   is unlikely that an announcement like that would
15   have gone out in such a public way before this one.
16   But it would have definitely been shown to a number
17   of people because Sea Change was actively flogging
18   the product before then.
19   395.   Q.   Can you elaborate a little bit on
20   the active, I believe you said, flogging of the
21   product; is that right?
22   A.   Yes. They were actively trying to
23   sell the product. Actively installing it in
24   customer locations. As I said, it was installed and
25   functional in a number of locations prior to this

G.G. Mackintosh – 101

1   trade show. And they were obviously incented to try
2   and show it to as many people as possible in order
3   to try to sell it to as many people as possible.
4   396.   Q.   Do you know what marketing channels
5   they used?
6   A.   No.
7   397.   Q.   Are you aware of any marketing
8   channels that anyone associated with JANUS used at
9   that time or...
10   A.   No.
11 398.   Q.   ...is that just not your...
12   A.   I just...no. Sorry.
13 399.   Q.   ...category? No problem. Was there
14   a website? Did the company have a website at this
15   time?
16   A.   The concept didn't exist. WWW, the
17   entire concept of the World Wide Web, came about
18   actually at exactly the same time as the
19   product...it happened in 1994. World Wide Web was
20   nascent. The protocol didn't actually even exist
21   in...the first versions of the firewall didn't
22   actually have a specific proxy for the World Wide
23   Web product...sorry, the World Wide Web protocol.
24   It initially used the generic proxy, so the firewall
25   product existed before that did.

G.G. Mackintosh – 102

1   400.   Q.   Was there anything even roughly
2   analogous to a website that could have been...
3   A.   No.
4   401.   Q.   ...on a message board or...
5   A.   Newsgroups, e-mail lists were sort
6   of the, you know, early versions of dissemination of
7   information over the net.
8   402.   Q.   Anything else along those channels?
9   A.   On the Internet itself? No, that
10   would have been...
11 403.   Q.   You mentioned newsgroups and...
12   A.   E-mail lists.
13 404.   Q.   ...e-mail lists. Is there anything
14   else that you would put in that category as a means
15   for communicating at that time?
16   A.   Not that I really recall. One of
17   the ones mentioned here, greatcircle.com, I believe
18   was an e-mail list. It may also have been a
19   newsgroup, but I don't know.
20 405.   Q.   And what is the difference between
21   an e-mail list and a newsgroup?
22   A.   There was a mechanism in place even
23   before the Internet existed as a wired entity of
24   disseminating information around as news articles.
25   And basically there were servers everywhere all over

G.G. Mackintosh – 103

1   the Internet that you would...instead of...where e-
2   mail is something that is sent to you, a newsgroup
3   is you basically publish, effectively, an article
4   and it goes into the newsgroup and that is
5   disseminated all over the world. And anybody who
6   wants to read it, basically, looks up that
7   particulars newsgroup and will find a number of
8   postings in that newsgroup along with yours. It is
9   sort of like a bulletin board, except it is a
10   globally distributed bulletin board. As opposed to
11   going to one place and seeing stuff, it basically is
12   everywhere and all the information is everywhere.
13 406.   Q.   Putting aside Great Circle for the
14   moment, did JANUS disseminate information about its
15   product...excuse me. Did the company...what is the
16   right company that was actually...I know Sea Change
17   was involved.
18   A.   Border. BNTi, BorderWare Network
19   Technologies, was our company.
20 407.   Q.   And Sea Change was?
21   A.   Our Canadian reseller, also one of
22   the founders of Border.
23 408.   Q.   So, putting aside Great Circle for
24   the moment, was BNTi using any newsgroups to
25   disseminate information about its product?

G.G. Mackintosh – 104

1   A.   Almost certainly. Such groups
2   existed and we almost certainly would have published
3   information to them when we were prepared to have
4   that information go out. But, you know, I have no
5   specific recollections of having done so.
6   409.   Q.   And that would have occurred in as
7   early as February of 1994?
8   A.   That is unlikely.
9   410.   Q.   How early do you think it would have
10   started?
11   A.   I can't say.
12 411.   Q.   Concurrent with the release of the
13   product in March of 1994?
14   A.   We would have started publishing
15   information to newsgroups and such when we started
16   publicly announcing the product. We might have been
17   sort of in a low key way involved in or talking
18   about stuff before then, but I don't recall. You
19   know, again, the marketing side was not my side. I
20   participated in the technical forums to some extent,
21   among other things establishing our bona fides as
22   experts in the field and therefore people that you
23   should trust when you want to deploy a product.
24 412.   Q.   Did BNTi ever have a website?
25   A.   Again, I don't think such...although

G.G. Mackintosh - 105

1   the World Wide Web started around that time, I don't
2   believe the concept of websites in the way you think
3   of them now existed until much later.
4   413.   Q.   Until after the company was
5   purchased?
6   A.   Right.
7   414.   Q.   Was there anything analogous to a
8   website...
9   A.   No. No.
10 415.   Q.   Just what we have been talking
11   about; the newsgroups?
12   A.   Right.
13 416.   Q.   Okay. So, even in the 1995 and
14   after the time period we have been focusing on, that
15   was still the...
16   A.   The way that the World Wide Web
17   evolved and became what you see today, much of that
18   happened after that fact. You mentioned earlier
19   that Omaya Elgiundi was involved in an early
20   installation of JANUS.
21   A.   Yes.
22 417.   Q.   Could you describe the time and...
23   what time was that installation done? And that
24   was...
25   A.   As we discussed, it would have been

G.G. Mackintosh - 106

1   in March of 1994.
2   418.   Q.   And where was that done?
3   A.   Rogers. Physically, I don't know.
4   I just know the corporation.
5   419.   Q.   And the process of installation that
6   was done by Omaya, how does that work?
7   A.   I don't know specifically what they
8   installed. I made the assumption as best as
9   discussed earlier, that Sea Change probably packaged
10   our software with a piece of hardware, a PC, pre-
11   installed the software on the product and then they
12   would have taken it to the customer and helped them
13   through the configuration and installation process.
14   I can't answer that specifically because I wasn't
15   present and, you know, I can only assume based on,
16   well, that is obviously what you would have to do
17   because that is what you would have to do.
18 420.   Q.   Was anyone else at the company
19   involved with sales or installations?
20   A.   Most sales...all early sales at that
21   time would have been going through Sea Change.
22   Anybody who contacted us directly we would have
23   passed off to Sea Change. It wasn't until later we
24   started allowing some direct sales and also we
25   established more reseller connections that were not

G.G. Mackintosh - 107

1   Sea Change. Sea Change was the first reseller
2   because they were one of the founding partners, and
3   that was actually their primary reason for existing
4   as a partner was to act as a sales channel.
5   421.   Q.   And I have asked you about this
6   before but I just want to make sure I have got it
7   right, so a couple questions. Do you know the date
8   of the first public use or display in Canada of the
9   JANUS product?
10   A.   The first high profile, like,
11   publicly announced...
12 422.   Q.   To anybody outside of the company.
13   A.   I can't say who or how many entities
14   Sea Change showed the product to because it was Sea
15   Change, not us. I know they would have been showing
16   it around quite a bit. I do know that obviously
17   they probably showed it to...I would have to assume
18   that Rogers wasn't the first company they showed it
19   to, because typically the first person you show it
20   to doesn't buy it. So, they likely would have
21   showed it to more than just Rogers prior to that.
22   They obviously showed it to Rogers in the March time
23   frame. But beyond that, I can't say.
24 423.   Q.   Were there any more informal
25   instances where the technology was shown, for

G.G. Mackintosh - 108

1   example, a company...a local company came to your
2   office or you went to their office and did a
3   presentation...
4   A.   I did nothing of that sort.
5   424.   Q.   Nothing of that sort? Okay.
6   A.   There may have been that kind of
7   thing happening at Sea Change. In fact, undoubtedly
8   there was that kind of thing happening at Sea
9   Change. But their office is in Mississauga and so I
10   would not have been present for any of it.
11 425.   Q.   So the company utilized your great
12   expertise for marketing exclusively at trade shows;
13   is that right?
14   A.   I believe that...sorry. I am not
15   sure...
16 426.   Q.   I can rephrase.
17   A.   ...what "The company" in this
18   context is, whether you mean Sea Change or whether
19   you mean Border.
20 427.   Q.   Border...while you were working for
21   Border in early to mid 1994, was the only example of
22   you communicating with people outside of the company
23   about the technology and explaining the technology
24   to them at trade shows?
25   A.   That usually was my only interaction

G.G. Mackintosh - 109

1   with customers. When we started getting other
2   customers that were not through Sea Change, when
3   we...so we would have to do direct technical
4   support, I initially took those calls until we got
5   somebody else to take those calls. So I would deal
6   with customers that were directly customers of us.
7   Customers that were customers of Sea Change, Sea
8   Change supported, so I would not have had
9   interaction with them.
10 428.   Q.   Was anyone other than Omaya Elgiundi
11   involved in installation of JANUS?
12   A.   Depending on the time frame, there
13   would have been multiple people later on at...I
14   believe at that early stage, Omaya was the only one.
15   But I am speculating. I am also going to have to
16   interrupt for a second. I need to take a break.
17 429.   MR. COOPER: It is 12:10. Off the
18   record.
19
20 --- A BRIEF RECESS
21
22 GLENN GARY MACKINTOSH, resumed
23 CONTINUED EXAMINATION BY MR. COOPER :
24 430.   MR. COOPER: I have an exhibit.
25   MR. CUKOR: Are you going to mark an

G.G. Mackintosh - 110

1   exhibit?
2 431.   MR. COOPER: Yes.
3   MR. CUKOR: My plan was that we, NPS,
4   were going to use the 500 series and you
5   were going to use whatever series you
6   continued from where you were before.
7 432.   MR. COOPER: Okay.
8   MR. CUKOR: Do you know what number you
9   left off at?
10 433.   MR. COOPER: Can we go off the record
11   for a second?
12
13 --- DISCUSSION OFF THE RECORD
14
15 BY MR. COOPER:
16 434.   Q.   Earlier today, we discussed the sale
17   of Border and I believe that you were using dollar
18   figure, Canadian dollars.
19   A.   Yes.
20 435.   Q.   I just want to make sure that that
21   is accurate and that those were not U.S. dollars.
22   A.   It was not specified which currency
23   they were in, but the numbers that I would have been
24   referring to would have been Canadian dollars.
25 436.   Q.   And what year was that?

G.G. Mackintosh - 111

1   A.   1996/1997...
2 437.   Q.   Okay.
3   A.   ...time frame. I don't know
4   exactly.
5 438.   Q.   Do you remember, was it, like, late
6   1996 or early 1997 or you are not really sure beyond
7   just those two years?
8   A.   I can't remember exactly.
9 439.   Q.   Okay.
10   A.   The sale happened...yes, I would
11   have to look.
12 440.   MR. COOPER: I will be marking Exhibit
13   80.
14
15 --- EXHIBIT NO. 80 : Manual entitled "BorderWare Firewall
16   Server User Guide" dated March, 1995
17
18 441.   MR. COOPER: It is a big one, but I am
19   not going to ask you to read it. The whole
20   thing, at least. As far as the marking
21   goes...
22   MR. MARKS: I think he is going to pass
23   that down.
24   THE DEPONENT: Thank you.
25

G.G. Mackintosh - 112

1 --- DISCUSSION OFF THE RECORD
2
3 BY MR. COOPER:
4 442.   Q.   I have just handed you Exhibit 80.
5   Does this document look familiar to you?
6   A.   I would have to look at it.
7 443.   Q.   Take as much time as you would like.
8   A.   I haven't examined it in detail, but
9   it looks like a manual that was published fairly...
10   reasonably early manual.
11 444.   Q.   When you say "early", what do you
12   mean?
13   A.   Later on in BorderWare, we changed
14   the user interface. And this has the early user
15   interface. So, I can tell the time frame of the
16   document based on the user interface.
17 445.   Q.   Before we get into the...further
18   into the contents, can we look at...you can keep
19   getting familiar with it. Let me know when...
20   A.   No, go ahead.
21 446.   Q.   Okay. Turning to the very front
22   page of this document, it is Bates stamped FORT-NPS
23   058927. On the top right corner, somewhat down the
24   page, what does the document say?
25   A.   "BorderWare Firewall Server User

G.G. Mackintosh - 113

1   Guide". So this is after the product has been
2   renamed.
3   447.   Q.   And at the bottom of the page, what
4   does it say?
5   A.   "BNTi Border Network Technologies
6   Incorporated".
7   448.   Q.   Based on your review of the
8   document, does it look like an accurate
9   representation of a user guide that Border would
10   have had early nineties?
11   A.   Again, I have only looked at the
12   very...very briefly looked at it. But it does look
13   like our manual.
14 449.   Q.   Do you see anything that suggests
15   that it is not accurate?
16   A.   No. It looks like it is likely the
17   manual that we would have produced. I obviously
18   haven't looked at all the pages in detail, but based
19   on a quick skim it looks like our manual.
20 450.   Q.   And what time period was
21   this...would you say that this manual was published?
22   A.   It is dated 1995, so...it is dated
23   March, 1995. It is also dated Version 2.3, so that
24   implies that there were a few versions earlier than
25   that of the manual.

G.G. Mackintosh - 114

1   451.   Q.   Do you know when the earlier
2   versions were published?
3   A.   No idea.
4   452.   Q.   No idea? Okay.
5   A.   Actually, it is not clear if the
6   version number is a reference to the version number
7   of the product or the version number of the manual.
8   453.   Q.   Okay.
9   A.   On further reflection, I am probably
10   going to guess that it is implying Version 2.3 of
11   the product. Not necessarily Version 2.3 of the
12   manual.
13 454.   Q.   When was Version 2.3 of the product
14   released?
15   A.   I don't know.
16 455.   Q.   Any idea?
17   A.   No.
18 456.   Q.   And this product described in the
19   manual, would it contain the core functionalities
20   that we discussed earlier that are contained in the
21   JANUS...
22   A.   As discussed earlier, we only ever
23   shipped transparent firewall product. And product
24   always contained that functionality. So, that would
25   be in this, yes.

G.G. Mackintosh - 115

1   457.   Q.   Okay.
2   A.   I haven't looked at it to find it in
3   here, but...
4   458.   Q.   Absolutely.
5   A.   ...it would have to be here.
6   459.   MR. COOPER: Great. So, that's that.
7   THE DEPONENT: Let me put this over here
8   before I write on another court document.
9   460.   MR. COOPER: I am handing you Exhibit
10   81.
11
12 --- EXHIBIT NO. 81 : Collection of e-mails from Steve
13   Lamb, Glenn Mackintosh
14
15 BY MR. COOPER:
16 461.   Q.   Are you familiar with this document?
17   A.   This is what appears to be a
18   collection of e-mails. I haven't looked at them
19   yet, so I can't say whether I am familiar with them.
20   But they look like they are from Steve Lamb and
21   responses to other e-mails.
22 462.   Q.   Can you read the top line into the
23   record, please? On the front page.
24   A.   "From firewalls-owner"?
25   "...From firewalls-owner Tuesday, July

G.G. Mackintosh - 116

1   12th, 22:20:28 1994..."
2   463.   Q.   And this is Bates number FORT-NPS
3   058679 through 058702. If you need to take time to
4   review it, you can. Does this look like a thread of
5   Great Circle postings?
6   A.   That is what it appears to be. A
7   quick scan, the headers look like they are Great
8   Circle e-mail address.
9   464.   Q.   And what process did one have to
10   undertake to post on the Great Circle website? For
11   example, did you have to have a membership?
12   A.   No.
13 465.   Q.   How did it work if you wanted to
14   post on Great Circle?
15   A.   I don't recall absolutely, but I
16   believe all you had to do was know the e-mail
17   address and send an e-mail to it. And that would
18   bounce through to the mailing list as a whole. It
19   may or may not have been a moderated e-mail list. I
20   don't know.
21 466.   Q.   What is a moderated e-mail list?
22   A.   A moderated e-mail list is one where
23   the individual who is responsible for the mailing
24   list reviews e-mails before allowing them to be
25   reflected through the list. An unmoderated group is

G.G. Mackintosh - 117

1   one where any message goes straight out.
2   467.   Q.   And you are not...
3   A.   I am not certain which of these it
4   was. I would guess it was probably unmoderated, but
5   that is a guess.
6   468.   Q.   You are not aware of any evidence
7   that it was moderated?
8   A.   No.
9   469.   Q.   Let me re-ask the question. Are you
10   aware of any evidence that it was moderated?
11   A.   No.
12 470.   Q.   So anyone that wanted to post on
13   Great Circle at this time in 1994, to your
14   knowledge, could have done so?
15   A.   Yes.
16 471.   Q.   There are no rules preventing...
17   A.   If it's an unmoderated mailing list,
18   then anyone can post to it.
19 472.   Q.   And anyone can read it, too?
20   A.   Yes, I believe to receive the
21   mailing list you had to subscribe to it, which
22   basically just meant you asked to be...for it to be
23   included in the sender...list of people it was sent
24   to. I don't remember absolutely, but, you know,
25   usually you just say...you send a message to

G.G. Mackintosh - 118

1   somebody saying, "I want this stuff. Send it to
2   me," and you got all the stuff.
3   473.   Q.   But are you aware of any instances
4   where people wanted to be on the message board but
5   weren't?
6   A.   That's not a normal thing that
7   happens.
8   474.   Q.   Are you aware of any instances?
9   A.   No, no.
10 475.   Q.   And in the firewall industry during
11   this period of time, were a large number of people
12   that were interested in and involved in firewall
13   technology posting and reading on Great Circle?
14   A.   greatcircle.com was a fairly well
15   respected place where people believed they could get
16   independent information that wasn't vendor-specific.
17   Brent Chapman and greatcircle.com were fairly well
18   respected in the community.
19 476.   Q.   Did Brent Chapman do anything other
20   than run this website and...run Great Circle during
21   this time, in the firewall industry?
22   A.   I don't know for certain. I believe
23   this is what he did, but I don't know more than
24   that. He may have had a consulting company. I
25   don't have more...he obviously had to make money

G.G. Mackintosh - 119

1   from something. Actually he published a book.
2   477.   Q.   What was the book about?
3   A.   Firewalls.
4   478.   Q.   The first e-mail on the first page,
5   58679 Bates number, is written by who?
6   A.   The first e-mail would be from
7   Steven Lamb.
8   479.   Q.   And can you summarize real briefly
9   the topic of his e-mail?
10   A.   It basically describes...it's saying
11   that the product is going to be shown at COMDEX
12   Canada trade show in July of '94, and it has a very
13   brief description of the product, including the
14   transparent nature of it.
15 480.   Q.   Does his description appear accurate
16   to you?
17   A.   Yes.
18 481.   Q.   On the next page, 58680?
19   A.   Yes.
20 482.   Q.   What do the top two lines right
21   there in the top middle say?
22   A.   "JANUS firewall server product
23   summary."
24 483.   Q.   And do these features accurately
25   summarize, in your view, the functionality of JANUS

G.G. Mackintosh - 120

1   at this time?
2   A.   Yes.
3   484.   Q.   On 58682 is there another e-mail
4   from Steve Lamb?
5   A.   So do you mean the one starting on
6   that page...
7   485.   Q.   Correct.
8   A.   ...or the one finishing on that
9   page? The one starting on that page is from Steven
10   Lamb, yes.
11 486.   Q.   And finishing on the next page,
12   58683?
13   A.   Yes.
14 487.   Q.   Can you briefly summarize what Steve
15   is saying in his response?
16   A.   Basically it's describing how the
17   network address translation feature of the product
18   allows you to connect unregistered IP addresses out
19   to the Internet. Many companies prior to connecting
20   to the Internet would not have obtained an IP
21   address from an official source, but would have just
22   picked a number and utilized it, and when you went
23   to connect to the Internet, you obviously couldn't
24   expose that number to the Internet because it may
25   belong to somebody else or it may be one that is not

G.G. Mackintosh - 121

1   allowed to be used.
2   There were addresses that were reserved
3   for...reserved to not be used for basically private
4   deployments, and therefore you couldn't connect
5   those to the public Internet, and the firewall
6   essentially, by the nature of hiding the internal
7   address space from the outside world, allowed you to
8   connect those networks to the Internet without
9   exposing that.
10 488.   Q.   And if we could flip a few a pages
11   to 058689, do you see an e-mail written by you?
12   A.   I see one that starts on that page,
13   and apparently I'm verbose because it lasts three
14   pages. It ends in my signature.
15 489.   Q.   Do you remember this e-mail?
16   A.   I haven't read it yet, but I can.
17 490.   Q.   Can you read it? Thank you.
18   A.   I have finished reading the
19   document.
20 491.   Q.   Great, thank you. Can you summarize
21   for us what you were talking about?
22   A.   I was responding to a...some
23   technical questions. Somebody posted a question to
24   the e-mail list, talking about how to try and hide
25   internal information of...internal networking

G.G. Mackintosh - 122

1   information about stuff that is behind the bastion
2   host or the firewall from the external networking,
3   and the various bits of information that you would
4   have to change and various mechanisms by which
5   information about the internal configuration could
6   leak through various other types of services, and he
7   was asking whether these things were necessary,
8   whether they were doable, and whether anybody was
9   doing them.
10   So I responded, trying to keep it as
11   little of an obvious product plug as possible, but
12   obviously had referred to our product, that
13   the...basically saying, "Yes and no," describing
14   what things did have to be done, whether he was
15   correct or incorrect about certain things, and also
16   describing that in...that our product essentially
17   did these things, because some of his questions
18   were, "Is anybody doing this?"
19 492.   Q.   Okay.
20   A.   Yes, there is a particular note here
21   about the transparent nature of stuff in it.
22 493.   Q.   What does it say about the
23   transparent nature?
24   A.   Towards the end of the e-mail I
25   specifically mentioned that:

G.G. Mackintosh - 123

1   "...The process is totally transparent to
2   any internal machines which have the
3   impression they are connecting directly to
4   the outside world. They do not realize the
5   connection is actually being intercepted by
6   the firewall, unless of course the service
7   is not one that is enabled to pass through.
8   This means that you do not have to
9   'SOCKSify' ..."
10   We talked about SOCKS earlier:
11   "...You do not have to 'SOCKSify' or
12   otherwise run special client software.
13   Your standard point and click PC and Mac
14   software will work as if the firewall were
15   not actually there..."
16 494.   Q.   Great. Turning back quickly to
17   Exhibit 503 we used earlier today?
18   A.   Sorry, different document?
19 495.   Q.   Can you clarify for us any
20   misstatements or things in here that, when we went
21   through it the first time, weren't accurately
22   reflected on the record?
23   A.   You asked me about a website, and I
24   misremembered, probably because I'm thinking of
25   websites as you think of them today, and they bear

G.G. Mackintosh - 124

1   absolutely no resemblance to what would have been
2   considered a website back then.
3   I know on one of these pages I
4   accidentally marked, noting the website. Now where
5   is the page? There it is. I note that we referred
6   to...an e-mail refers to a web server at
7   www.border.com, and so clearly we did have a
8   website, although at that point in time it would
9   have been, like, a purely textual thing. You would
10   basically see a bunch of text, like probably not
11   that much different than looking at an e-mail or
12   whatever.
13   So it would have been probably very
14   rudimentary, but apparently we did have a website.
15   The other things I wanted to comment on is it
16   actually establishes the time frames that I couldn't
17   remember. This e-mail is dated October 30th, '94,
18   and it's from Ron Adkins, I believe, yes, from Ron
19   Adkins, and it refers to the Networld Interop show
20   that we attended in September.
21 496.   Q.   Of 1994?
22   A.   Of 1994. So that would have been
23   the Atlanta trade show. So it specifies the date
24   here, and also it refers to Unix Expo New York,
25   which is the one at the J. Javits Center that I

G.G. Mackintosh – 125

1   couldn't remember, and it refers to:
2   "...As a result of our representation at
3   Interop and at Unix Expo..."
4   So obviously that is past tense. So the New York
5   trade show was prior to this October date.
6   497.   Q.   Prior to October, '94?
7   A.   Prior to October 30th, '94.
8   498.   Q.   Great, thank you. Any
9   other...anything else?
10   A.   It refers to installed customers
11   like Spar Aerospace and Rogers Communications.
12   499.   Q.   Great, thank you. Was there
13   anything in the press release, Exhibit 501, that you
14   reviewed that is worth mentioning, or was it just
15   503 that you...
16   A.   In 501 I corrected that earlier
17   where I mentioned that we did have inbound
18   authentication for Telnet and our log-in. I had
19   earlier in the conversation with Michael said we
20   didn't have authentication, but I had forgotten
21   about the inbound proxying of that to the internal
22   network, but that was discussed earlier already.
23   500.   Q.   Great.
24   A.   And I apologize for marking up court
25   documents.

G.G. Mackintosh – 126

1   501.   MR. COOPER: No problem. I'm marking
2   Exhibit 82.
3
4   --- EXHIBIT NO. 82:   Excerpts from manual "BorderWare
5   Firewall Server User Guide", Version
6   2.1, dated August, 1994
7
8   BY MR. COOPER:
9   502.   Q.   Do you recognize this document?
10   A.   I'll need to glance through it a
11   little bit.
12   503.   Q.   Absolutely.
13   A.   There are actually two documents
14   here by the way. One is a manual and one is a FAQ.
15   504.   Q.   What Bates number does the second
16   one start?
17   MR. MARKS: 657.
18
19   BY MR. COOPER:
20   505.   Q.   Let's treat everything up to 656 as
21   Exhibit 82. Take your time if you want to review.
22   A.   No, I have done a quick scan of it.
23   506.   Q.   Okay, are you familiar with this?
24   A.   It rings a bell, but I didn't write
25   it. It would appear to be a manual for one of

G.G. Mackintosh – 127

1   the...an earlier manual than the last one, a manual
2   for one of the earlier versions of the product.
3   This appears to be Version 2.1, and from August of
4   '94.
5   507.   Q.   And this is Bates number FORT-
6   NPS058635. Could you read the lines at the top
7   right corner, please?
8   A.   "...JANUS Firewall Server user's
9   guide, selected chapters..."
10   508.   Q.   And the two lines just beneath?
11   A.   "...Version 2.1, selected chapters,
12   August, 1994..."
13   509.   Q.   And you mentioned that this is an
14   earlier version than the manual we looked at a few
15   minutes ago?
16   A.   This one is from August, '94. I
17   believe the one you showed me earlier was from some
18   time in '95.
19   510.   Q.   Does this manual contain the core
20   functionalities of the JANUS technology?
21   A.   Yes, it discusses the transparency,
22   the firewall servers, the ease of deployment.
23   511.   Q.   Does it look like an accurate
24   representation of a manual at that time? Do you see
25   any indication that it's not accurate?

G.G. Mackintosh – 128

1   A.   I haven't read it extremely
2   carefully, but from a brief skim, it looks like an
3   accurate manual of the product.
4   512.   Q.   And the functionalities contained in
5   here would have been communicated to the public at
6   this time, in August, 1994, in the marketing
7   materials and such?
8   A.   Yes, this would have been generated
9   as marketing collateral and as operations manual.
10   Well, actually this particular thing is excerpts
11   from the user guide. So this, therefore, would
12   likely have been marketing collateral that would
13   have been distributed as opposed to the actual full
14   user guide which would have been distributed with
15   the product.
16   So this would likely be just
17   the...intended as marketing collateral.
18   513.   Q.   Who would it have been distributed
19   to?
20   A.   Anybody who wanted marketing
21   collateral. It looks a little bit large, so it is
22   probably not something that we would have
23   necessarily handed out to everyone at a trade show,
24   but it is probably something we had available.
25   514.   Q.   All right.

G.G. Mackintosh - 129

1   A.   And undoubtedly Sea Change would
2   have been this out to customers, or rather, out to
3   prospects.
4   515.   MR. COOPER: I'm now handing you Exhibit
5   83.
6
7   ---   EXHIBIT NO. 83:   Document entitled "FAQ JANUS
8   Internet Firewall Server FAQ", dated
9   November 28, 1994
10
11 BY MR. COOPER:
12 516.   Q.   If you would like, you can take some
13   time to familiarize yourself with the document.
14   It's Bates number FORT-NPS058657.
15   A.   Actually I'm going to correct myself
16   again. It looks like we have a third document.
17 517.   Q.   I think you're correcting me, but
18   that's okay. Let's...
19   A.   In fact, I'm going to say I think
20   four documents. I think there are three separate
21   documents in my hands right now.
22 518.   Q.   Let's focus on up to 58668.
23   A.   That's part of that.
24 519.   Q.   Are you familiar with this?
25   A.   It looks like a FAQ for the JANUS

G.G. Mackintosh - 130

1   product.
2   520.   Q.   And what does the top line read?
3   A.   "...FAQ Janus Internet Firewall
4   Server FAQ..."
5   521.   Q.   And just above that, what is the...
6   A.   November...
7   522.   Q.   ...date?
8   A.   Sorry, I didn't mean to cut you off.
9   523.   Q.   No problem.
10   A.   28 November, 1994.
11 524.   Q.   And does this look like a FAQ
12   document that you remember?
13   A.   Yes, it looks like a standard
14   question and answer type thing. A FAQ is a document
15   that tries to pre-answer questions that customers or
16   other people may have about the product, and this
17   answers a number of questions about the JANUS
18   firewall.
19 525.   Q.   Is there any indication that this is
20   not an accurate copy of the JANUS...
21   A.   No, it appears to be.
22
23 ---   EXHIBIT NO. 84:   Document entitled "JANUS Firewall
24   Server, dated November 29, 1994"
25

G.G. Mackintosh - 131

1   BY MR. COOPER:
2   526.   Q.   Great. Exhibit 84 beginning on
3   Bates 058669?
4   A.   Shouldn't any of these be stapled
5   together so they don't get all mixed up? I'm
6   concerned I'm piling them on top of one another, and
7   they're going to get...
8   MR. CUKOR: It's not your fault. Why
9   don't you stagger them and we'll clean them
10   up?
11
12 BY MR. COOPER:
13 527.   Q.   Are you familiar with this document?
14   A.   If you'll give me a moment to read
15   it...
16 528.   Q.   Absolutely.
17   A.   ...or at least scan it? Okay.
18 529.   Q.   Are you familiar with this document?
19   A.   I don't recall it, but looking at it
20   now, it looks familiar. It looks like a description
21   of the product and features and services.
22 530.   Q.   What does the top line say?
23   A.   "...29 November, 1994, JANUS
24   Firewall Server..."
25 531.   Q.   And just beneath that?

G.G. Mackintosh - 132

1   A.   "...Product description, version
2   2.2.1..."
3   532.   Q.   Does this look like an accurate copy
4   of what would have been a product description guide?
5   A.   It appears to be.
6
7   ---   EXHIBIT NO. 85:   Product brochure
8
9   BY MR. COOPER:
10 533.   Q.   I'm handing you Exhibit 85, Bates
11   FORT-NPS058677. Please review.
12   A.   Okay.
13 534.   Q.   Are you familiar with this document?
14   A.   This looks familiar. It looks like
15   one of very early product brochures. It's a sort of
16   typical one-pager handout in trade shows or
17   whatever.
18 535.   Q.   Around what time would this have
19   been distributed to the public?
20   A.   I couldn't say.
21 536.   Q.   You mentioned that it was early. Do
22   you have a time period in mind?
23   A.   It says "JANUS". So obviously it
24   was prior to the name change. It talks about us
25   having seven-day, 24-hour hotline support.

G.G. Mackintosh - 133

1   So...from BNTi. So it was...it would have been a
2   little later than the first release, than the first
3   product availability, because we were providing
4   support ourselves as opposed to just going through
5   Sea Change Corporation.
6   More specific than that, I can't really
7   say. There is not enough...there is no information
8   here that can narrow down that time frame.
9   537.   Q.   I believe you answered this already,
10   but what date was the name change?
11   A.   I didn't say because I don't know.
12   538.   Q.   Got it. It may have been asked or
13   not.
14   A.   It was asked, and I said I don't
15   know.
16   539.   Q.   Got it, thank you.
17
18   ---   EXHIBIT NO. 86:   Document entitled "BorderWare
19   Firewall Server Installation Guide"
20
21   BY MR. COOPER:
22   540.   Q.   I'm handing you Exhibit number 86.
23   Please familiarize yourself with the document.
24   A.   Okay.
25   541.   Q.   This is Bates number FORT-NPS058591.

G.G. Mackintosh - 134

1   MR. MARKS: It starts at 590. Turn the
2   page over.
3
4   BY MR. COOPER:
5   542.   Q.   Thank you. FORT-NPA058590. Can you
6   read the top three lines for us, please?
7   A.   "...BorderWare Firewall Server
8   installation guide..."
9   543.   Q.   And the bottom line?
10   A.   "...BNTi Border Network Technologies
11   Incorporated..."
12   544.   Q.   Are you familiar with this document?
13   A.   I am now. It appears to be, like...
14   545.   Q.   Before today?
15   A.   I probably would have been at the
16   time, but now I would not have recognized it, other
17   than looking at it. It looks like an installation
18   guide for our product.
19   546.   Q.   Does it look like an accurate guide
20   for an installation guide for your product at this
21   time?
22   A.   Yes.
23   547.   Q.   Thank you.
24
25   ---   EXHIBIT NO. 87:   Document entitled "CVS log for cvs-

G.G. Mackintosh - 135

1   repos/border/server/proxyftp
2   relay.c"
3
4   BY MR. COOPER:
5   548.   Q.   I'm now handing you Exhibit 87.
6   Please familiarize yourself with the document. I
7   have to apologize. I gave you a version that is not
8   Bates-stamped. So I have going to have to give you
9   an identical copy, but one with a Bates number. Can
10   I see the one I gave you? I'm handing you Exhibit
11   87, Bates-stamped FORT-NPS058705.
12   A.   Okay.
13   549.   Q.   Are you familiar with the content of
14   this document?
15   A.   Now I am. I had frankly completely
16   forgotten that we even ever used CVS. We probably
17   wouldn't have been using it right at the very
18   beginning. So this first check-in noted here was
19   probably not the absolute first version of the
20   software. It would be from when we started using
21   CVS.
22   550.   Q.   And what is CVS?
23   A.   CVS is a version control software.
24   It's used for...in deployment processes it is used
25   to control and manage software projects and keep

G.G. Mackintosh - 136

1   track of your code and changes made to the code. So
2   this first check-in here is April 22nd, 1994, and
3   that is March...the initial revision, but that means
4   it's the first check-in to the source repository.
5   It doesn't mean it's the first version of the code.
6   It just means this is when we started using CVS.
7   551.   Q.   And throughout all the revisions
8   that are contained in this document, the JANUS
9   system maintained the core functionalities that we
10   have been talking about?
11   A.   Yes, it would have existed in the
12   very...from here and earlier. This is already
13   talking about modifying and simplifying the
14   implementation. So this would have been...you know,
15   this was not very, very first version. It's after
16   it's already working and deployed and then changing
17   it and configuring it to simplify and improve it.
18   552.   Q.   Thank you.
19
20   ---   EXHIBIT NO. 88:   Document entitled "JANUS Firewall
21   Server", PowerPoint presentation by
22   Sea Change, Bates number FORT-
23   NPS058723
24
25   BY MR. COOPER:

G.G. Mackintosh - 137

553.   Q.   I'm handing you Exhibit number 88,
            Bates number FORT-NPS058723. Please familiarize
            yourself with the document.
            A.   I'm going to take a staple out.
            MR. MARKS: Go ahead.
            MR. CUKOR: How many more do you have?
554.   MR. COOPER: Two.
            THE DEPONENT: Okay.

BY MR. COOPER:
555.   Q.   Before today, were you familiar with
            this document?
            A.   No.
556.   Q.   What does it say at the very top?
            A.   "...JANUS Firewall Server..."
557.   Q.   And then the three bullets?
            A.   "...Firewalls, traditional
                  approaches, the JANUS Firewall Server..."
558.   Q.   And what is this document?
            A.   It appears to be a PowerPoint
            presentation by Sea Change, which as mentioned
            before, was our first reseller, describing the
            features of the products, and it looks to have some
            comparisons to at least one other product, the DEC
            SEAL product.

G.G. Mackintosh - 138

559.   Q.   Does it accurately reflect the JANUS
            technology?
            A.   It's a very high level. There is
            not really much in the way of detail in it.
560.   Q.   Do see any inaccuracies?
            A.   There is nothing in it that would
            be...that I would qualify...that I would say is
            inaccurate, but it doesn't really say a lot up until
            the last, where it actually lists sort of the design
            philosophies or features of the product.
561.   Q.   Thank you.
            A.   It's a pretty high level sales pitch
            kind of thing.
562.   MR. COOPER: The last exhibit, 89, Bates
                  number 8058721.

---   EXHIBIT NO. 89:   JANUS logo and photocopy of label on
                  a floppy disk

BY MR. COOPER:
563.   Q.   Please review it.
            A.   Yes.
564.   Q.   Are you familiar with this?
            A.   No, but I can tell you what it
            appears to be.

G.G. Mackintosh - 139

565.   Q.   What does it appear to be?
            A.   It appears to be the JANUS logo on
            one side, and on the other side it looks like a
            photocopy of a DAT tape and an...actually, sorry.
            It looks like it's a photocopy of a three and a
            quarter floppy disk.
566.   Q.   The Bates number is FORT-NPS058721.
            Is there a meaning behind the logo of the two faces
            looking in opposite directions?
            A.   Yes, that's the...JANUS was the name
            of a Roman god. It's actually talked about in one
            of the earlier documents that you put down, but
            essentially he was the guardian, as a I
            recall...this is very vague at this point. As I
            recall, he was the guardian to Olympus or something
            like that, hence a sort of security implication.
            He also had two faces and that we used
            that to sort of reflect the two faces that the JANUS
            Firewall product presented, the different...in the
            one face, from the outside, where all you could see
            was the firewall, and the other face presented to
            the inside, where you appeared to be able to have
            transparent connectivity to the outside world.
            So that was sort of...the whole idea
            between the name was that sort of dual nature of the

G.G. Mackintosh - 140

            transparent visibility to the outside, but
            completely different vision of things to the inside
            and outside.
567.   Q.   And what is a JANUS install
            diskette?
            A.   The way you installed...the product
            went out as...the software was shipped as two
            things. In the early days it went out as a floppy
            diskette and a DAT tape. The...you would boot the
            machine...you would take a stock PC, insert the
            floppy diskette and boot the machine off the floppy.
            That would then load the actual firewall
            server itself off of the DAT tape, and overwrite the
            OS on whatever PC you already had, and turn it into
            a firewall server.
568.   Q.   Two or three more questions, then
            I'm done. Going back to something we talked about
            earlier, do you remember what Phil Trubey's
            involvement was with NetPartners running JANUS in
            California in 1994?
            A.   Phil Trubey was NetPartners. I
            believe it was a one-man operation, although it
            probably got bigger later, but initially it was a, I
            believe, a one-man operation.
            I don't know what he did other than

G.G. Mackintosh - 141

1   selling the JANUS and later BorderWare firewall

2   product, but he was...what I know he did was that he

3   took the JANUS product and packaged that with PC-

4   based hardware and sold it as a unit to customers.

5   So he basically...as I described Sea Change did.

6   Not all sales of the product were software

7   and hardware like that. In fact, later on, most of

8   the sales were software only, but a lot of resellers

9   gained additional profit margin and initial markup

10   by combining the software with hardware that they

11   purchased and selling it as a unit, and that is what

12   he did.

13 569.   Q.   Do you know where he sold this

14   geographically?

15   A.   I don't believe he had a geographic

16   limitation in terms of where in the U.S. he was

17   allowed to sell. I believe he was allowed to sell

18   anywhere in the U.S. I know he was based out of

19   California, so probably most of the sales would have

20   been in that area.

21 570.   Q.   Are you aware of any specific sales

22   in California in 1994?

23   A.   I am not aware of any specific sales

24   by NetPartners. They would have not...we would

25   never have seen their end customers, because he

G.G. Mackintosh - 142

1   would have been providing the initial support. When

2   there were customer issues, they would call...when

3   there were customer issues with his customers, they

4   would call him, and then he would call us.

5   Well, initially, he would call me. So I

6   provided him some initial customer support for his

7   customers, but I never talked to his customers

8   directly.

9 571.   Q.   Was there anything else other than

10   what you just described that you would do for Mr.

11   Trubey to help him sell your product, any other

12   things that you would send him or...

13   A.   We would have provided marketing

14   collateral, that kind of thing.

15 572.   Q.   When you say "that kind of thing" in

16   addition to marketing?

17   A.   Whatever marketing collateral we

18   would have had, we would have made available to him

19   to use.

20 573.   Q.   Okay, anything else you can think

21   of?

22   A.   Not off the top of my head.

23 574.   Q.   Is there anyone else who would have

24   information about what Mr. Trubey was doing, other

25   than you and Mr. Trubey in this time frame?

G.G. Mackintosh - 143

1   A.   Steve Lamb probably would have

2   had...been more on the product marketing side

3   contact with him. My interactions with Phil were

4   primarily on the technical side. That was sort

5   of...that would have been in the phase where the

6   main initial product development was done, and we

7   had sort of split out. Now we were trying to market

8   the stuff.

9   So I was doing the tech work, and Steve

10   was focusing on getting it out there and getting it

11   sold, and...Steve and Rod, rather, and later on

12   others, who were focusing on the sales marketing.

13   So we divided that up between Steve and...I took on

14   the technical side and Steve did the sales marketing

15   side.

16   So he would...he and Rod Adkins would

17   probably be able to provide more information about

18   those interactions with Phil Trubey. In fact,

19   probably Rod Adkins, perhaps more than Phil...more

20   than Steve, because Rod would have been sort of more

21   directly sales and marketing at that point.

22 575.   MR. COOPER: Thank you.

23   MR. CUKOR: I have a couple of follow-up

24   questions. Let's go off the record.

25

G.G. Mackintosh - 144

1 --- DISCUSSION OFF THE RECORD

2

3 CONTINUED EXAMINATION BY MR. CUKOR:

4

5 576.   Q.   Mr. Mackintosh, you don't remember

6   the exact month of the BNTi acquisition date, do

7   you?

8   A.   No.

9 577.   Q.   And you don't remember the exact

10   month of the JANUS product name change?

11   A.   No.

12 578.   Q.   You don't remember the exact month

13   of the different trade shows?

14   A.   I didn't, but now I do because I saw

15   them in the documents, but I did not prior to seeing

16   those dates, no.

17 579.   Q.   And you didn't remember the month

18   that you left the University of Toronto, correct?

19   A.   Not the exact time frame, no.

20 580.   Q.   And there is no documentary evidence

21   that shows that March, '94 was when you first made a

22   sale of the JANUS Firewall product, correct?

23   A.   None that has been presented here.

24   I'm sure that Sea Change probably has documentation

25   of that, and Rogers probably has documentation of

G.G. Mackintosh - 145

1   that. I would imagine that there are purchase
2   orders and such like, nothing that has been
3   presented here, but I'm sure it can be documented.
4   581.   Q.   But there are no documents you have
5   seen?
6   A.   Not here, no.
7   582.   Q.   And you don't have any?
8   A.   No.
9   583.   Q.   And if you look at Exhibit 87, which
10   you looked at before, in fact, it shows that the
11   first version of the source code was entered into
12   the revision system in April of '94, correct?
13   A.   Yes, but as noted, this would not
14   have been the initial revision of the product. This
15   was the first time that we started using SVN. Prior
16   to this, we wouldn't have been using SVN.
17   584.   Q.   Is it identified on Exhibit 87 as
18   the initial revision, correct?
19   A.   That means the initial checked-in
20   revision. It's the first revision checked into the
21   software, and that would actually be probably the
22   comment I would have used across...we would have
23   checked in the entire software base at once, and
24   that is probably the same...that comment would have
25   been applied to every piece of thing that would have

G.G. Mackintosh - 146

1   been checked in, because it's the initial revision.
2   It's the initial check-in, not the first version of
3   any one piece of software.
4   585.   Q.   This is the first time that you
5   began to use...
6   A.   The software...sorry, I apologize.
7   I don't mean to interrupt. Go ahead.
8   586.   Q.   April, '94 is the first time that
9   BNTi used a software repository?
10   A.   Yes.
11   587.   Q.   Are you confident that March, '94,
12   the month before that, is the date that you made
13   your first sale?
14   A.   I'm not sure that that could be
15   categorized as a sale. It was the first
16   installation. It was a beta installation. It
17   probably was not a sale, but yes.
18   588.   Q.   And why are you so sure about that
19   date?
20   A.   Just because I remember the time
21   frame. I know...that's all. I remember that time.
22   Sorry.
23   589.   Q.   Is it possible that you're wrong by
24   a couple of months one way or the other?
25   A.   I know it was in the spring, and

G.G. Mackintosh - 147

1   so...and I remember it being in sort of around the
2   Q1 time frame. So it couldn't be significantly
3   different than March, because March is Q1.
4   Following that would be Q2.
5   590.   Q.   Of all the other dates I asked you,
6   you weren't able to remember a specific month. So
7   let me ask you again, is it possible that the date
8   of your first installation could have been off by a
9   couple of months in either direction?
10   A.   I do not believe so.
11   591.   Q.   And it's just because you...that's
12   the date that you remember?
13   A.   None of the other things were
14   particularly important. So they don't establish
15   a...none of the other dates were...really affected
16   much. They were not important dates, so they don't
17   sink in.
18   The first actual installation of product
19   was a pretty big event.
20   592.   Q.   Was it bigger than you making 14
21   million dollars?
22   A.   You have to remember the
23   announcement of the...oh, sorry, remember, sorry,
24   you don't remember. You have to understand that the
25   announcement of the acquisition happened quite a

G.G. Mackintosh - 148

1   significant amount of time before the closing of the
2   sale, and then...you know, then I worked there for a
3   year.
4   So the...and I didn't actually have any of
5   that cash available to me for quite some time.
6   Also, frankly, I tried very hard...to be blunt, I
7   tried very hard to live as if I didn't have that
8   money because I knew people who got really seriously
9   warped by having a lot of cash. So actually for a
10   very long time I ignored the fact that I had money.
11   I didn't use it. I still lived in an
12   apartment, the same apartment, that I lived in when
13   I was working for the university for a significant
14   period of time after, you know, I had that money.
15   So I did not change my lifestyle, and I
16   tried...so no, the exact time frame, I...I know that
17   it happened before my mom passed away. So...
18   593.   Q.   Let me just get your testimony
19   straight.
20   A.   Sorry, I don't know why that...
21   594.   Q.   No, I'm sorry. Why don't we go off
22   the record for a minute?
23
24   ---   DISCUSSION OFF THE RECORD
25

G.G. Mackintosh - 149

1   BY MR. CUKOR:
2   595.   Q.   Let me ask you a question since we
3   went off the record.
4   A.   Okay.
5   596.   Q.   Let me just make sure that I
6   understand your testimony straight, and it is that
7   the first install of a JANUS Firewall at a beta site
8   was a more significant event to you than the sale of
9   your entire Border Net Technologies company, and
10   also a more significant event for you than quitting
11   your prior job at the University of Toronto?
12   A.   Certainly more significant than
13   quitting the prior job, not more significant than
14   the sale, but the sale spread over a period of time.
15   The initial...that whole period of time was
16   confusing.
17   We were in the process of putting IPO
18   documents together and going public, which I was
19   doing. We agreed to be purchased instead of going
20   public, so there was negotiations around that.
21   There was the agreement to be purchased, and then it
22   took a number of months for the actual purchase to
23   occur.
24   During that time frame there were a number
25   of personal issues that were highly conflicting

G.G. Mackintosh - 150

1   between me and an extremely close friend, and
2   also...sorry, and also after the announcement of the
3   sale, a...there was...not that long after a period,
4   within the same year, in December of that year, my
5   mother was killed.
6   597.   Q.   Sorry.
7   A.   And so...and so that messes up my
8   recollection of things at that time. That was in
9   the dark, and that kind of obscures some of the
10   other stuff.
11   598.   Q.   Just my last question.
12   A.   I apologize.
13   599.   Q.   Is it possible that the first
14   install of the JANUS Firewall product happened in
15   the spring of 1994, but not necessarily in March?
16   A.   I do not believe so.
17   600.   Q.   You don't believe it's possible?
18   A.   I do not believe it's possible.
19   601.   MR. CUKOR: Okay, I have no more
20   questions.

G.G. Mackintosh - 151

INDEX OF EXHIBITS

G.G. Mackintosh - 152

INDEX OF EXHIBITS (Cont'd)

G.G. Mackintosh – 153

INDEX OF EXHIBITS   (Cont'd)

EXHIBIT   PAGE
NUMBER   DESCRIPTION
NUMBER

        REPORTER'S NOTE:
            I hereby certify the foregoing to be a true and accurate
transcription of
            the above noted proceedings held before me on the 5th DAY OF JUNE,
            2013 and taken to the best of my skill, ability and understanding.
                                            }
                                            }   Certified Correct:
                                            }
                                            }
                                            }
                                            }   _____
                                            }   Greg Vaughan
                                            }   Verbatim Reporter
                                            }

G.G. Mackintosh – 154

INDEX OF EXHIBITS   (Cont'd)

EXHIBIT   PAGE
NUMBER   DESCRIPTION
NUMBER

                                ERRATA SHEET
            PAGE   LINE

                                    I, Glenn Mackintosh, have read and
                        reviewed page 1 to 151 and, with the exception of the above-noted
                        corrections, hereby agree to the accuracy of my statements recorded
herein.

                        Date